"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

36519
S/081/62/000/006/016/117
B166/B101

5.5100

AUTHOR: Novikov, A. I.

TITLE: Coprecipitation of small quantities of various cations and anions with metal hydroxides

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 6, 1962, 40, abstract 6B257 (Tr. Tashkentsk. konferentsii po mirn. ispol'zovaniyu atomn. energii. V. 2. Tashkent, AN UzSSR, 1960, 349-353)

TEXT: Tagged atoms were used to study the influence exerted by the microcomponent concentration, the pH of the solution, the concentration of foreign ions, the quantity of carrier, the contact time of the solution and the precipitates, and the order of reagent mixing on the magnitude of coprecipitation of Cs, Sr, Cd, Y, Ga, In, Cr, W, Re, I, P, and S with the hydroxides of Fe, Al, and Pb. The author suggests that by changing the conditions of coprecipitation one can carry out at least a group separation of the microcomponents of complex mixtures. [Abstracter's note: Complete translation.]

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

NOVIKOV, A.I.

Coprecipitation of phosphate ions and iron hydroxide. Dokl. AN Tadzh. SSR 3 no.1:17-22 '60. (MIRA 13:12)

1. Tadzhikskiy gosudarstvennyy universitet imeni V.I.Lenina. Predstavleno chlenom-korrespondentom AN TadzhSSR A. Adkhamovym.
(Phosphates) (Iron hydroxide)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

NOVIKOV, A.I.

New simple method for separating rhenium and molybdenum. Dokl. AN Tadzh. SSR 3 no. 2:19-21 '60. (MIRA 14:4)

1. Tadzhikskiy gosudarstvennyy universitet imeni V.I. Lenina. Predstavleno chlenom-korrespondentom AN Tadzhikskoy SSR A. Adkhamovym.
(Rhénium) (Molybdenum)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

S/153/60/003/02/05/034
B011/B003

5,6230

AUTHOR: Novikov, A. I.

TITLE: Co-precipitation of Some Anions With Hydroxides of Metals

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya, 1960, Vol. 3, No. 2, pp. 239-244

TEXT: In the article under review the author lists the results of co-precipitation of small amounts of monovalent and bivalent anions with ferric- and aluminum hydroxide. Radioactive isotopes J^{131}, Re^{186}, Cr^{51}, and W^{185} were used for the purpose. W^{185} did not prove to be free of impurities. The distribution of the microcomponent between precipitate and solution was determined mostly by measurement of the radioactivity of the solution. The precipitated carrier-hydroxide was previously separated by a centrifuge of type TsE-3 or T 13/R. A potentiometer of type LP-5 or PPTV-1 and a galvanometer of type M-91-A was used for determining the pH value. The following conditions

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between 0.015 and 2.00 M and at a different sequence of mixing the reagents is shown in Fig. 2. The occurrence of $HCrO_4^-$ ions accompanied by a reduction of the pH can be determined from the curves of the diagram "pH of the solution - % of the co-precipitated part of the chromate ions" (Fig. 4) in the case of a sufficient ionic strength of the solution. Ferric hydroxide can be used for concentrating small amounts of chromate ions. The adsorbed anions can be easily washed out with alkali from the hydroxide precipitate. The co-precipitation of tungstate ions with ferric hydroxide can be perfect within a certain pH-range and drop to zero with pH-increase. Apparently this process has a chemosorptional character. The article under review was read at the 1. Mezhvuzovskaya konferentsiya po radiokhimii (Interuniversity Conference of Radiochemistry) in Moscow, April 20 - 25, 1959. Mention is made of V. I. Plotnikov. There are 5 figures and 6 references, 4 of which are Soviet.

ASSOCIATION: Tadzhikskiy gosudarstvennyy universitet im. V. I. Lenina; Kafedra obshchey khimii (Tadzhik State University imeni V. I. Lenin; Chair of General Chemistry)

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Co-precipitation of Some Anions With Hydroxides of Metals

S/153/60/003/02/05/034
B011/B003

SUBMITTED: June 3, 1959

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

S/153/60/003/004/[illegible]/[illegible]
B023/B054

AUTHOR: Moyikov, A. I.

TITLE: Coprecipitation of Chromate Ions With Iron Hydroxide

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya. 1960. Vol. 3, No. 4, pp. 583-590

TEXT: The present paper gives experimental data concerning the coprecipitation of chromate ions with iron hydroxide in dependence on various conditions: pH of the medium, concentration of CrO_4^{2-} ions, concentration of foreign ions, amount of carrier, order of mixing of solutions. The methods used were the same as in earlier papers (Refs. 8, 9). The distribution of chromate ions between solution and hydroxide precipitate was controlled by the radioactive isotope Cr^{51}. The photocolorimetric diphenyl carbazide method was also used in several experiments (Ref. 10). Both methods yielded equal results. The radioactivity of solutions was

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Coprecipitation of Chromate Ions With Iron Hydroxide

S/153/60/003/004/008/040/XX
B023/B054

measured in a quartz cuvette. An adsorption of chromate ions [illegible] walls of the vessel was not observed even at low concentrations. The pH of the solution was measured with two hydrogenous electrodes by means of a [illegible] (PPTV-1) potentiometer and an M 95/4 (M 95/4) galvanometer. In several cases, the pH was determined by an [illegible] (LP 5) lamp potentiometer with three glass electrodes. The precipitate was separated from the solution in a [illegible]-3 (TsE-3) centrifuge at 6600 rpm. Figs. [illegible] show experimental conditions and results. Fig. 1 shows the dependence of the coprecipitation of chromate ions with iron hydroxide on the pH value of the solution. With different chromium concentrations in the initial solution, coprecipitation decreases with increasing pH of the solution. Fig.2 shows the effect of the order of mixing of solutions on the coprecipitation of chromate ions with iron hydroxide. Fig. 3 shows the effect of ammonium chloride concentration on the coprecipitation of chromate ions with iron hydroxide. Fig.4 the dependence of this coprecipitation on the amount of carrier. Fig. 5 illustrates the coprecipitation in the presence of different anions. Cl^-, NO_3^- and SO_4^{2-}. Coprecipitation in the presence of sulfate ions is lower than in the presence

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of chloride ions The effect of sulfate ions on coprecipitation is not specific. Fig.6 illustrates the adsorption of chromate ions on iron hydroxide in the presence of different anions A replacement of the cation NH_4^+ by K^+, and vice versa, hardly affects the extent of adsorption. A replacement of Cl^- by NO_3 ion reduces adsorption by 10% at the same concentration and pH 6-8 Fig 7 illustrates the desorption of chromate ions precipitated with iron hydroxide The coprecipitation of small amounts of chromate ions with iron hydroxide depends on the adsorption on the surface of the iron hydroxide precipitate, and may change in dependence on the conditions of the process Coprecipitation of chromate ions at a concentration $\sim 10^{-4}$ g ion/l a chloride or ammonium nitrate concentration ~ 0.5 M and a carrier amount, 0.1 mg at of iron, may be complete at pH ~6 It decreases at pH 9 11 The dependences found permit a determination of the most favorable conditions (pH, carrier amount, etc), provided that the concentration or selective extraction of chromate ions was conducted from chloride or nitrate solutions. The author mentions N F Yermolenko and S A Levina

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

Coprecipitation of Chromate Ions With Iron Hydroxide

S/[illegible]/60/003/004/006/[illegible]/XX
B023/B054

There are 7 figures and [illegible] references: [illegible] Soviet, [illegible] German, and [illegible] US

ASSOCIATION: Tadzhikskiy gosudarstvennyy universitet im. V. I. Lenina Kafedra obshchey khimii (Tadzhik State University imeni V. I. Lenin, Department of General Chemistry)

SUBMITTED: December 23, 1958

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

S/075/60/015/006/010/018
B020/B066

AUTHOR: Novikov, A. I.

TITLE: Coprecipitation of Tungsten With Iron Hydroxide

PERIODICAL: Zhurnal analiticheskoy khimii, 1960, Vol. 15, No. 6, pp. 742-745

TEXT: Coprecipitation of tungsten with iron hydroxide was studied by using the radioisotope W^{185}. The distribution of tungsten among the solution and the precipitate was determined by the radioactivity of the dry residue which had been obtained after evaporation of part of the solution (0.200 ml) in a platinum vessel with a Т-25 БФЛ(T-25 BFL) counter in a Б-2(B-2) device. The solution was centrifuged from the precipitate, the pH of the solution was measured by means of the two glass electrodes of an ЛП-5 (LP-5) pH meter; it was 0.2, 1.0, and 2.0 in solutions containing NH_4Cl in the individual experimental series. The time of contact of the solution with the precipitate was 30 minutes, the volume of the solution 20 ml, and the temperature 18° C. The activity of W^{185} was measured at a minimum distance of the precipitate from the counter window (8 mm) and at an initial

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Coprecipitation of Tungsten With Iron Hydroxide

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B[illegible]20/B066

activity of the preparation of [illegible] im; min. Under the given conditions, the experimental error caused by Re^{188} was less than 0.5%. The quantitative condition of the coprecipitation was checked by the thiocyanate method, except for the measurement of the radioactivity of the solution by photometric determination of tungsten in the solution. In the pH range from coagulation of the precipitate up to 7.7, the precipitation of the tungstate ions with $Fe(OH)_3$ proceeds quantitatively, if the activity is measured by means of the T-25 BFL counter under the given conditions (Fig. 1). When using other counters (MCT-17 (MST-17) or AS-1 (AS-1)), or in the case of other distances between preparation and counter window, other salt concentrations, etc., the error of measurement is much higher. Coprecipitation of tungstate ions with iron hydroxide in alkaline solution depends on the pH of the solution and on the order in which the solutions are poured together (Fig. 2). The determination of 1 mg of W proceeds quantitatively in the pH range from the beginning coagulation of the precipitate up to a pH of 7.7 - 8.2, as well as on precipitation of the carrier with pyridine. A change of the NH_4Cl concentration from 0.2 to 2.0 M does not affect the coprecipitation of tungsten

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with iron hydroxide, which is indicative of a chemisorption reaction owing to the formation of sparingly soluble tungstates on the $Fe(OH)_3$ surface. The sorption of the tungstate ions on the surface of the $Fe(OH)_3$ precipitate when adding potassium tungstate to freshly precipitated $Fe(OH)_3$ increases with the time of contact of the solution with the precipitate (Fig. 3). Vikt. I. Spitsyn (Ref. 8) showed that a pH decrease of the solution to 8-6 accounts for a conversion of the tungstate ions to paratungstate ions. Under the given conditions (pH 8 - 10), this process does probably not take place in solution, but the increase of sorption of tungstate ions by the negatively charged surface of the $Fe(OH)_3$ precipitate in the given pH range proves that a chemical process takes place which causes the tungsten coprecipitation to become more intense. When increasing the quantity of carrier up to 0.2 mg atom of iron, coprecipitation of tungstate ions increases on precipitation of $Fe(OH)_3$ in their presence; the pH range in the quantitative precipitation of 1 mg of W is extended up to pH = 8.6. There are 3 figures and 8 references: 6 Soviet, 1 German, and 1 US.

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

Coprecipitation of Tungsten With Iron Hydroxide

S/075/60/015/006/016/018
B020/B066

ASSOCIATION: Tadzhikskiy gosudarstvennyy universitet, Stalinabad (Tadzhikian State University, Stalinabad)

SUBMITTED: February 20, 1960

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APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

NOVIKOV, A.I.

Separation of rhenium and molybdenum by coprecipitating the latter with iron hydroxide. Zhur.anal.khim. 16 no.5:588-591 S-O '61. (MIRA 14:9)

1. Lenin Tajik State University, Stalinabad.
(Rhenium--Analysis) (Molybdenum--Analysis)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

SPITSYN, Yu.G., kand.tekhn.nauk; NOVIKOV, A.I., inzh.; VOLKOV, N.S., inzh.; REZNIK, Yu.R., inzh.

Speed of the propagation of ultrasonic vibrations in rocks under monaxial compression. Sbor.DonUGI no.26:96-106 '62. (MIRA 16:6)

(Ultrasonic waves—Speed) (Rocks—Testing)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

NOVIKOV, A.I.

Coprecipitation of trivalent chromium with ferric hydroxide.
Zhur.anal.khim. 17 no.9:1076-1081 D '62. (MIRA 16:2)

1. V.I. Lenin Tajik University, Dushanbe.
(Chromium compounds) (Iron hydroxides)
(Precipitation (Chemistry))

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

NOVIKOV, A.I.; STAROVOYT, I.A.

Coprecipitation of plutonium with ferric hydroxide. Zhur. anal. khim. 19 no.3:340-352 '64. (MIRA 17:9)

1. Tadzhikskiy gosudarstvennyy universitet imeni V.I. Lenina, Dushanbe.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

NOVIKOV, A.I.; FINKEL'SHTEYN, Ye.I.

Coprecipitation of iodate and periodate ions with ferric hydroxide. Zhur. anal. khim. 19 no.5:541-544 '64.
(MIRA 17:8)

1. Tadzhikskiy gosudarstvennyy universitet imeni Lenina, Dushanbe.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

NOVIKOV, A.I.; PIROGOVA, T.A.

Separation of lanthanum, barium, and cesium by coprecipitation with iron hydroxide. Dokl. AN Tadzh.SSR 8 no.9:21-25 '65.
(MIRA 18:12)

1. Tadzhikskiy gosudarstvennyy universitet imeni V.I.Lenina.
Submitted January 25, 1965.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1"

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L 22242-66 EWT(m)/EWP(t) IJP(c) JD

ACCESSION NR: AP6005422 (N) SOURCE CODE: UR/0289/65/000/003/0064/0068

AUTHOR: Novikov, A. I. 18 B

ORG: Tadzhik State University im. V. I. Lenin, Dushanbe (Tadzhikskiy gosudarstvennyy universitet)

TITLE: Use of coprecipitation with ferric hydroxide for the separation of small quantities of elements

SOURCE: AN SSSR. Sibirskoye otdeleniye. Izvestiya. Seriya khimicheskikh nauk, no. 3, 1965, 64-68

TOPIC TAGS: chemical separation, chemical precipitation, periodic system

ABSTRACT: There is a frequent need in analytical chemistry and radiochemistry for the separation of neighboring elements in the periodic system. With the aim of separating pairs and groups of such elements, the author uses the difference in the degree of sorption of small quantities of elements by ferric hydroxide at specific pH values of the medium. This difference was observed as a result of a systematic investigation of the coprecipitation of microquantities of elements with other hydroxides, depending on the concentration of the studied element and salts in the solution, the pH, the length of time the solution was in contact with

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the precipitate, order of mixing of the reagents, and other factors. Table 1 shows the elements the coprecipitation of which has been studied by the author in considerable detail. The shaded squares indicate elements the coprecipitation

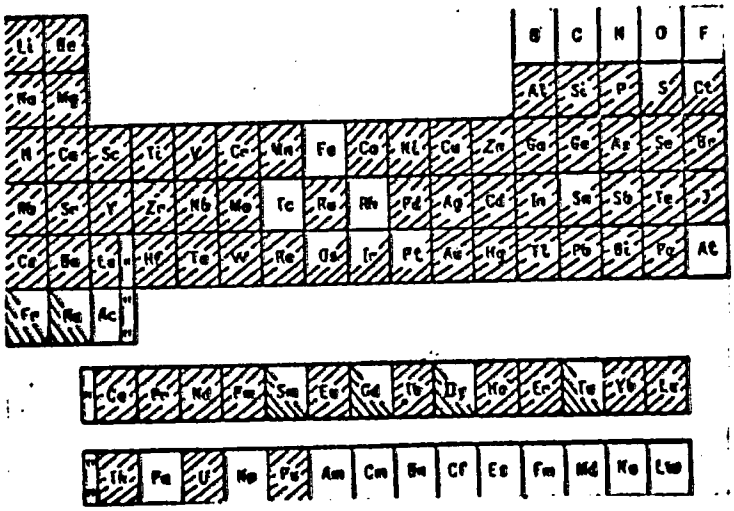

Table 1. Various degrees of detail of the study of coprecipitation of small quantities of elements with ferric hydroxide.

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of which has been studied in comparative detail; the half-shaded squares, elements the coprecipitation of which has been studied in less detail, but the principle relationships of sorption of which to certain conditions are quite clear; the reverse shading shows elements the behavior of which in the process of coprecipitation with hydroxides should not differ from the behavior of analogous elements in the periodic system. As an example, the author presents experimental data on the separation of the following groups and pairs of elements: yttrium-strontium-rubidium; lanthanum-barium-cesium; scandium-calcium-potassium; tantalum-tungsten-rhenium; tellurium-iodine; cadmium-indium; lithium-beryllium; and niobium-molybdenum. There is every reason to expect the development of simple, fast, and effective methods for the separation of other pairs and groups of elements, e.g., Na-Mg-Al, Y-Zr, V-Cr-Mn-Fe-Co, P-S, and S-Cl. An investigation of the coprecipitation of small quantities of elements with hydroxides may be used not only for the concentration or separation of microcomponents, but for the study of their state in solutions as well. In direct applications, coprecipitation of microcomponents may be used extensively for the purification of radioisotopes of admixtures, for the isolation of isotopes without carriers, for the purification of raw materials prior to irradiation, and for other purposes. Orig. art. has: 5 figures and 1 table.

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L 57117-65 EWT(m)/EPF(n)-2/EWA(h) Pu-4

ACCESSION NR: AP5011869 UR/0120/65/000/002/0034/0042 539.1.075:539.172.4

AUTHOR: Voytovetskiy, V. K.; Korsunskiy, I. L.; Novikov, A. I.; Pazhin, Yu. F.; Silakov, R. S.

TITLE: Spectrometer for the charged particles emitted in fast-neutron reactions

SOURCE: Pribory i tekhnika eksperimenta, no. 2, 1965, 34-42

TOPIC TAGS: spectrometer, scintillation spectrometer, fast neutron

ABSTRACT: An experimental outfit with a scintillation spectrometer for measuring energy and angular distributions of charged particles emitted in fast-neutron reactions is described. A neutron generator consists of a single-stage accelerating tube with a magnetic analyzer; accelerating voltage, 150 kv; h-f oscillator frequency, 100 Mc; power, 200 w; four zirconium targets with 15—20 curies of tritium in each are used; total flux, 2×10^{10} neutrons/sec. A scintillation "telescope" includes two FEU-44 photomultipliers with 80-μ and 160-μ thick CsI(Tl) crystals and one FEU-42 photomultiplier with a 1.8-mm thick crystal. A combined voltage pulse from three detectors is shaped,

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amplified, and applied to a 300-channel energy analyzer controlled by a triple-

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ACCESSION NR: AP5011869

coincidence pulse. The combined pulse from the first two detectors, via an amplifier, is applied to a 100-channel energy-loss pulse-height analyzer, also controlled by the triple-coincidence pulse. The coincidence-circuit resolution is 1_{μ} sec. Complete separation of deuterons and protons is provided. The energy range of the spectrometer is 7—20 Mev. The spectrometer was used for studying the interaction between neutrons and hydrogen and deuterium. The spectrometer parameters (selectivity, 5.5% energy resolution for 13.7 Mev protons, low background noise) permitted measuring the energy and angular distributions of the

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for his participation in the designing of the [illegible]

5 formulas.

ASSOCIATION: none

SUBMITTED: 04Mar64 ENCL: 00 SUB CODE: NP

NO REF SOV: 004 OTHER: 007

Card 2/2

NOVIKOV, A.I., inzh.; TSUKANOV, G.M., inzh.

New technical solutions in the design of deep mines in the Donets Basin are reducing costs and time of their construction. Shakht. stroi. 9 no.10:1-5 O '65. (MIRA 18:9)

1. Institut Donglipromshakht.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

NOVIKOV, A.I.

Systems for mining flat seams in mines of the Donets Basin. Ugol' Ukr. 2 no.2:42-44 F '58. (MIRA 13:3)

1.Stalingiproshakht.
(Donets Basin--Coal mines and mining)

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

NOVIKOV, A.I., SOLODOVSHCHIKOV, I.I., CHERPHYSHEV, V.I., otv.red.

[Collection of decrees and orders concerning labor for workers in railroad transportation] Sbornik postanovlenii i rasporiazhenii po trudu dlia rabotnikov zheleznodorozhnogo transporta. Moskva, Gos. transp. zhel-dor. izd-vo, 1946. 263 p. (MIRA 11:9)

1. Russia (1923- U.S.S.R.) Ministerstvo putey soobshcheniya.
(Labor laws and legislation)
(Railroads--Employees)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

AKULOV, A.V., doktor veterinarnykh nauk; KONSTRIMAVICHUS, L.M. [Kontrimavicius, L.], kand. veterinarnykh nauk; NOVIKOV, A.I.

Case of white muscle disease in d:icklings. Veterinariia 40 no.6:62-63 Je '63. (MIRA 17:1)

1. Vsesoyuznyy institut eksperimental'noy veterinarii (for Akulov, Kontrimavichus). 2. Direktor Severo-Kazakhstanskoy oblastnoy veterinarno-bakteriologicheskoy laboratorii (for Novikov).

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

NOVIKOV, A.I., inzh. (Moskva); GUBAREV, M.I., POPOVNINA, N.I., BURD, V.S.; SUDIT, Zi.M.

New sprayers. Zashch. rast. ot vred. i bol. 6 no.7:25-26 Jl '61. (MIRA 16:5)

1. Gosudarstvennoye spetsial'noye konstruktorskoye byuro L'vovskogo soveta narodnogo khozyaystva.

(Spraying and dusting equipment)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

NOVIKOV, A. K.

Furnaces

Automatizing the combustion process of a shaftmill furnace. Rat. energ. 2 no. 6, 1952.

9. Monthly List of Russian Accessions, Library of Congress, December 1952 1953. Unclassified.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

1. NOVIKOV, A. K.

2. SSSR (600)

4. Furnaces

7. Automatic feed for shaft-mill furnaces.
Tekst. prom. 12 No. 11, 1952

9. Monthly List of Russian Accessions, Library of Congress, February 1953, Unclassified.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

NOVIKOV, A.K.; KOLESNIKOV, A.Ye.; MASHARSKIY, B.N.

Calibrating vibrometers used for measuring vibrations of mechanisms. Izm.tekh. no.2:32-35 Mr-Ap '58. (MIRA 11:3)
(Vibration--Measurement)
(Calibration)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

NOVIKOV, A.K.; MASHUKOV, V.I.; CHERNOV, S.F.; NIKOLAYEV, V.P.; VOLODARSKAYA, Sh.G.

Relation of the line of least resistance to the borehole diameter in mining operations. Vzryv. delo no.55/12: 239-244 '64. (MIRA 17:10)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

S/046/61/007/004/008/014
B104/B102

AUTHOR: Novikov, A. K. (Leningrad)

TITLE: Three-dimensional correlation of plane bending waves

PERIODICAL: Akusticheskiy zhurnal, v. 7, no. 4, 1961, 465-469

TEXT: The author investigates coherence disturbances of bending waves possessing a continuous spectrum resulting from the dispersion of the phase velocities. The approximation

$$R(\tau_m, x) = \int_{\omega_0-\frac{\Delta\omega}{2}}^{\omega_0+\frac{\Delta\omega}{2}} \cos\left[-\omega_0\tau + \frac{(\omega-\omega_0)^2 x}{8\omega_0 c_\Phi^0}\right] d\omega =$$

$$= \cos\omega_0\tau \int_{\Omega_1}^{\Omega_2} \cos\frac{\Omega^2 x}{8\omega_0 c_\Phi^0}\, d\Omega + \sin\omega_0\tau \int_{\Omega_1}^{\Omega_2} \sin\frac{\Omega^2 x}{8\omega_0 c_\Phi^2}\, d\Omega =$$

$$= 2\sqrt{\frac{4\pi\omega_0 c_\Phi^0}{x}}\left[\cos\omega_0\tau\int_0^{\Phi}\cos\frac{\pi}{2}\vartheta^2 d\vartheta + \sin\omega_0\tau\int_0^{\Phi}\sin\frac{\pi}{2}\vartheta d\vartheta\right] =$$

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

Three-dimensional correlation of plane ...

$$= 4\sqrt{\frac{\pi\omega_0 c_\Phi''}{x}}\sqrt{C^2(\vartheta)+S^2(\vartheta)}\cdot\cos(\omega_0\tau-\varphi); \qquad (8)$$
$$\varphi = \operatorname{arc\,tg} C(\vartheta)/S(\vartheta).$$

containing Fresnel's integrals is obtained by the steady-phase method for the maximum of the correlation function of the traveling waves. The cosine is substituted by $\omega - \omega_0 = \Omega$, then

$$\vartheta = \frac{\Delta\omega}{2}\sqrt{\frac{x}{4\pi\omega_0 c_\Phi''}} = \frac{\Delta f}{2f_0}\sqrt{\frac{x}{2\lambda_x}} \qquad (9)$$

is introduced and, subsequently, the Fresnel's integrals are transformed into the canonical form

$$C(\vartheta) = \int_0^\vartheta \cos\frac{\pi}{2}\vartheta^2 d\vartheta, \quad S(\vartheta) = \int_0^\vartheta \sin\frac{\pi}{2}\vartheta^2 d\vartheta \qquad (A),$$

where $C^2(\ )$, $S^2(\ )$ $^{1/2}$ determines the distance of the corresponding point on the Cornu spiral from the origin of the coordinates.

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

Three-dimensional correlation of plane ... B104/B102

$$R(0, 0) = \lim_{\tau \to 0} \int_{\omega_0 - \frac{\Delta\omega}{2}}^{\omega_0 + \frac{\Delta\omega}{2}} \cos \omega\tau \, d\omega = \Delta\omega. \qquad (8)$$

is used for normalizing the correlation function, and thus

$$r(\tau_m, x) = \frac{R(\tau_m, x)}{R(0, 0)} = \frac{1}{\Phi} \sqrt{C^2(\Phi) + S^2(\Phi)} \cos(\omega_0 \tau - \varphi). \qquad (10)$$

is obtained for the maximum of the normalized correlation function. As can be seen from (9) and (10), the maximum of the normalized correlation function is determined by the relative band width $\Delta f/f_o$ of the random-process spectrum and the relative distance x/Λ_i between the considered points of the wave $x_o = 4\Lambda_i(f_o/\Delta f)^2$ (12) is obtained for the coherence interval, i. e., the distance within which the bending waves may be considered as being practically coherent. For an octave band of white noise holds: $\Delta f/f_o = 0.67$, $x_o \leq 9\ \Lambda_u$; for a semi-octave band holds: $\Delta f/f_o = 0.35$; $x_o \leq 34\ \Lambda_u$; for a third-octave band $\Delta f/f_o = 0.23$, $x_o \leq 74\ \Lambda_u$.

Card 3/4

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1"

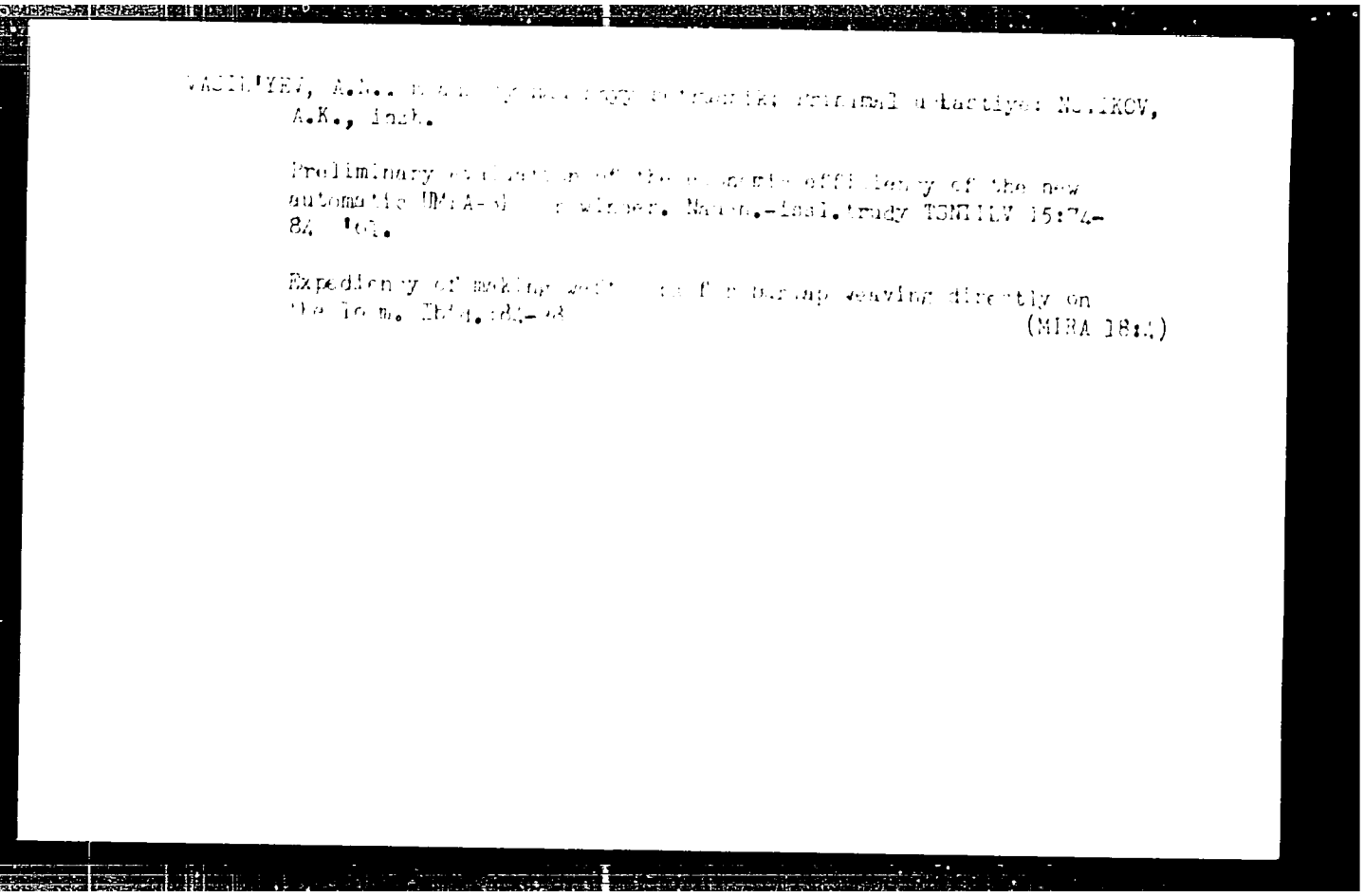
"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

NOVIKOV, Anatoliy Konstantinovich; KHOLODENKO, Mikhail Izrailevich; NAUMOV, I.I., nauchn. red.; TABUNINA, M.A., red.izd-va; SHERSTNEVA, N.V., tekhn. red.; PAVLOVA, V.D., tekhn. red.

[Organization of assembly-line high-speed construction at the 37th section of the Southwest District in Moscow; practices of the Apartment House Combine of the Main Division for Housing and Civilian Construction in the City of Moscow] Organizatsiia potochno-skorostnoi zastroiki 37-go kvartala IUgo-Zapadnogo raiona Moskvy; iz opyta raboty domostroitel'nogo kombinata Glavmosstroia. Moskva, Stroiizdat, 1964. 47 p. (MIRA 17:3)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1



VASIL'YEV, A.L., [illegible] IKOV, A.K., inzh.

Preliminary [illegible] of the [illegible] of the new automatic UM-1A-3 [illegible]. Mekh.-lab.trudy TSNIILV 15:74-84 '61.

Expediency of making [illegible] for [illegible] sewing directly on the [illegible]. TSNIILV, 18:43-48 (MIRA 18:4)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

MASHUKOV, V.I.; BULANOV, G.M.; NOVIKOV, A.K.; VOLCHENKO, N.G.

Localizing shock air waves during large-scale blasting.
Met. i gornorud. prom. no.6:51-52 N-D '65.
(MIRA 18:12)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

SURNINA, Nina Fedorovna; NOVIKOV, Aleksandr Konstantinovich; POTAP'YEV, Nikolay Khristoforovich; SOKOLOVA, V.Ye., redaktor; KISELEV, M.S., retsenzent; DYENIK, S.A., doktor tekhnicheskikh nauk, redaktor; MEDVEDEVA, L.A., tekhnicheskiy redaktor

[Linen weaving] L'notkachestvo. Moskva, nauchno-tekhn. izd-vo Ministerstva tekstil'noi promyshl. SSSR, 1955. 391 p.
(Linen) (MLRA 9:4)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

NOVIKOV, A.K.; REYMERT, M.V.

Weft winding machine "Unifil" (from "Tobres" no.3, 1957). Tekst. prom. 18 no.3:59-60 Mr '58. (MIRA 11:3)
(United States--Textile machinery)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

NOVIKOV, A.K., starshiy nauchnyy sotrudnik; Prinimali uchastiye: KULYAVTSEVA, G.P.; PODOBEDOV, S.M.; MURAV'YEVA, L.A.

Determining the basic parameters of the structure of hollow cops. Nauch.issl.trudy TSNIILV 12:71-103 '59. (MIRA 15:8)
(Yarn) (Winding machines)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

MASHUKOV, V.I., gornyy inzh.; NOVIKOV, A.K., gornyy inzh.; [illegible] N.B., gornyy inzh.

Using the KZDSh-58 pyrotechnical relay at the Odra-Bash Mine. Gor. zhur. no.9:70 S '64. (MIRA 17:12)

1. Institut VostNIGRI, Novokuznetsk.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

SURNINA, Nina Fedorovna, kand. tekhn. nauk; NOVIKOV, Aleksandr Konstantinovich; SIDOROV, M.I., retsenzent; MEN'SHENINA, V.A., red.

[Equipment and technology for the manufacture of linen fabrics] Oborudovanie i tekhnologiia l'notkatskogo proizvodstva. Moskva, Legkaia industriia, 1965. 432 p. (MIRA 18:7)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

S/124/62/000/004/010/030
D251/D301

24 4300
24 2120
AUTHORS: Vinogradov, B. S., Krasil'nikov, V. A., Alemasov, N. A. and Novikov, A. L.

TITLE: Investigating the working process and the characteristics of centrifugal compressors

PERIODICAL: Referativnyy zhurnal, Mekhanika, no. 4, 1962, 39, abstract 4B235 (Tr. kazansk. aviats. in-ta, 1960, no. 56

TEXT: Existing methods of calculating the flow part of a centrifugal compressor with the application of results of experimental investigations conducted in the Kazanskiy aviatsionnyy institut (Kazan Aviation Institute) between 1949-1959 were described and discussed. The described experiments were carried out on the basis of two compressors of types TK-19 (TK-19) and [illegible] (AM-35A) with straight radial blades having two variants of the working wheels (closed and semi-closed) and two variants of the diffusors (with and without blades). The work consists of five chapters. In the first are described the known basic dependences between the para-

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S/124/62/000/004/010/030
D251/D301

Investigating the working ...

meters of a centrifugal compressor obtained with the help of one-dimensional jet calculation theory. The second chapter is devoted to the experimental investigation of the flow of air in a model wheel. The distribution of the flow parameters is measured at various radii and in the outlet section with respect to the breadth of the inter-blade channel and the blade height for the closed and semi-closed wheels. Numerous graphs are given. The well-known lack of coincidence between the actual distribution of the flow-meters and the theoretical distribution for the movement of an ideal liquid is confirmed, and for some regimes the [illegible] curve of pressure distribution with respect to the breadth is shown. The influence of the air circulation is studied for the working of a wheel of semi-closed type. All investigations in this chapter are carried out for small subsonic velocities of rotation. In the third chapter an appraisal is made of the experimental investigation of the air flow in bladeless and vaned diffusors, also carried out for small subsonic velocities, and a comparison made with previously published data. Graphs are given for the distribution of the parameters along the breadth and length of

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the channel. Possibilities are considered of improving the characteristics of the compressors with a project of a bladed diffusor taking into consideration the structure of the running current, and corresponding recommendations are given for the design and set-up of a bladed diffusor. It is affirmed, in contrast to recommendations wide-spred in the literature, that the directing blades ought to be set up with a minimum distance between the wheel and the forward edge of the blade. The entry angle of the blade, it is recommended, should be made as small as possible, and even equal to zero. In the fourth chapter the construction of the characteristics is considered of the compressor, the most convenient coordinate system is discussed, and the influence on the characteristics of various similarity criteria. The possible displacement is discussed and the deformation of the curves of the characteristics due to different atmospheric conditions at the entry. In the fifth chapter an approximation method is proposed for the evaluation of the characteristic of the centrifugal compressor with revolution of the blades of the entry directing apparatus, if the characteristics are known for some given angle of the blade set-up. A method is

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Investigating the working ... S/124/62/000/004/010/030
D251/D301

recommended for compressors with regularized entry directing apparatus. It is necessary to point out that each form of the experiments of the KAI was carried out only for one type of compressor, which makes the wide generalization of the data difficult. 51 references. [Abstracter's note: Complete translation.]

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APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

NOVIKOV, A.L.

Third Plenum of the Scientific Technological Society for Ferrous Metallurgy. Metallurg 8 no.3:23 Mr '63. (MIRA 16:3)
(Iron—Metallurgy) (Steel—Metallurgy)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

NOVIKOV, A.L., fel'dsher (Pervomayskiy meditsinskiy punkt Zapadno-Kazakhstanskoy oblasti)

Our work at the feldsher-midwife center. Fel'd. i akush. 23 no.6:50-51 Je '58 (MIRA 11:6)

(WEST KAZAKHSTAN PROVINCE--PUBLIC HEALTH, RURAL)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

NOVIKOV, Aleksandr Leont'yevich, prof.; IZOTOVA, G.M., red.; DMITRIYEVSKAYA, M.A., khudozhestvenno-tekhnicheskiy red.

[Manual for the identification of trees and shrubs in a leafless state] Opredelitel' derev'ev i kustarnikov v bezlistnom sostoianii. Kiev, Gos.izd-vo sel'khoz.lit-ry USSR, 1959. 312 p. (MIRA 12:8)
(Trees) (Shrubs)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

NOVIKOV, A.L.; GUNYAZHENKO, I.V.

Vitamin content in conifer needles of some local and introduced species. Bot. issl. Bel. otd. VBO no.6:208-213 '64. (MIRA 18:7)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

NOVIKOV A. M.

Novikov A. M. "Experience in the Operation of Automatic Regulators at the Gudaut Tobacco Fermentation Plant," Tabak [Tobacco], 1953, No 1, Pages 46-47.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

NOVIKOV, A.M.

Changing the method of the fastening of ferodo brake lining.
Sbor. rats. predl. vnedr. v proizv. no.2:68-69 '61.
(MIRA 14:7)

1. Magnitogorskiy metallurgicheskiy kombinat.
(Cranes, derricks, etc.—Brakes)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

NOVIKOV, A.M., inzh.

Potential for raising the performance of the ESh-4/40 walking excavator in the Kuznetsk Basin. Ugol' 39 no.5:38-41 My '64. (MIRA 17:8)

1. Trest Kuybyshevugol' kombinata Kuzbassugol'.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

NOVIKOV, A.M., inzh.

Using a cortactless command apparatus on excavators. Gor.zhur. no.2:65-67 F '64. (MIRA 17:4)

1. Gosudarstvennyy trest ugol'nykh predpriyatiy Kuybyshevskogo rayona Kombinata ugol'nykh predpriyatiy Kuznetskogo kemennougol'nogo basseyna.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

86784

S/076/60/034/011/017/024
B004/B064

5.2400 2209, 1335 1273

AUTHORS: Vetyukov, M. M., Semerikova, I. A., and Novikov, A. N. (Leningrad)

TITLE: Viscosity of Some Melts of the System HF - KF

PERIODICAL: Zhurnal fizicheskoy khimii, 1960, Vol. 34, No. 11, pp. 2583-2586

TEXT: The present paper deals with an experimental study of the viscosity of melts of the system HF - KF in the range 35-48% HF (acid potassium fluorides) which is of great practical importance. Measurements were made with a torsion pendulum viscosimeter described in Ref. 2. The KF - HF mixtures were prepared by saturating the KF.HF bifluoride with gaseous HF at approximately 100°C. The temperature of the melt was measured with an iron-constantan thermocouple. As the volatility of the compounds rendered experimenting difficult, the mean values from the initial and the final composition are given. A monotonic increase of viscosity with a decrease of HF concentration was found. There are 2 figures, 1 table, and 3 Soviet references.

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

NOVIKOV, A.M.; BEREZINSKIY, O.P.; GANEYEV, A.G.; LEBEDEV, S.M.

New equipment for guniting the brickwork of open-hearth furnaces. Stal' 20 no.8:712-713 Ag '60.
(MIRA 13:7)

1. Vsesoyuznyy institut ogneuporov i Leningradskiy Kirovskiy zavod.
(Open-hearth furnaces--Maintenance and repair)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

USSR/Nuclear Physics - Mu meson production FD-3273

Card 1/1 Pub. 146 - 32/44

Author : Novikov, A. N.; Pontecorvo, B. M.; Selivanov, G. I.

Title : Possibility of the formation of penetrating radiation (μ^0 mesons) in collisions of high-energy protons with nuclei

Periodical : Zhur. eksp. i teor. fiz., 29, No 6(12), Dec 1955, 889-892

Title : A communication based upon the results of a work carried out in 1954 and earlier described in Otchet Instituta Yadernykh Problem AN SSSR (Reports of the Institute of Nuclear Problems, Acad. Sci. USSR). The authors propose here that the virtual process $(N) \rightarrow (N) + (\mu,\mu)$ (N: nucleon) takes place, as also indicated by others (e.g. R. E. Marshak, Mesons physics, 1952). They describe experimental arrangement, consisting of target, collimator, deflecting magnet, telescope of scintillation counters serving as monitor, telescope of proportional counters serving as detector of penetrating radiation, convertor, counter filled with BF_3, etc. They call attention to related work of B. Feld et alii (Phys. Rev., 96, 1386, 1954), noted just as they completed the work described here. They remark on the agreement of results. Eight references, all Western but one (cited above).

Institution: Institute of Nuclear Problems, Academy of Sciences USSR

Submitted : July 15, 1955

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

Novikov, A.N.

21(6) PHASE I BOOK EXPLOITATION SOV/2583

International Conference on the Peaceful Uses of Atomic Energy. 2nd, Geneva, 1958.

Doklady sovetskikh uchenykh; fizicheskiye reaktory i yadernaya energetika. (Reports of Soviet Scientists; Nuclear Reactors and Nuclear Power) Moscow, Atomizdat, 1959. 707 p. (Series: Its Trudy, vol. 2) Errata slip inserted. 8,000 copies printed.

General Eds.: N.A. Dollezhal, Corresponding Member, USSR Academy of Sciences, A.K. Krasin, Doctor of Physical and Mathematical Sciences, A.I. Leypunskiy, Member, Ukrainian SSR Academy of Sciences, I.I. Novikov, Corresponding Member, USSR Academy of Sciences, I.I. Parfenov, Doctor of Physical and Mathematical Sciences, and V.S. Alymov; Tech. Ed.: Yu. I. Rassl'.

PURPOSE: This book is intended for scientists and engineers engaged in reactor designing, as well as for professors and students of higher technical schools where reactor design is taught.

CONTENTS: This is the second volume of a six-volume collection on the peaceful uses of atomic energy. The six volumes contain the reports presented by Soviet scientists at the Second International Conference on Peaceful Uses of Atomic Energy, held from September 1 to 13, 1958 in Geneva. Volume 2 consists of three parts. The first is devoted to atomic power plants under construction in the Soviet Union; the second to experimental and research reactors, the experiments carried out on them, and the work to improve them; and the third, which is predominantly theoretical, to problems of nuclear reactor physics and construction engineering. Yu. I. Koryakin is the science editor of this volume. See SOV/2081 for titles of all volumes of the set. References appear at the end of the articles.

PART II. EXPERIMENTAL AND RESEARCH REACTORS

Leypunskiy, A.I., V.S. Alymov, N.N. Ponomarev, A.I. Leypunskiy, I.I. Bondarenko, O.D. Kazachkovskiy, G.Ya. Gerasimov, A.A. Bochvar, N.A. Dollezhal', and N.A. Dollezhal'. Experimental Fast Reactors in the USSR (Report No. 2029) 215

Blokin, I.S., V.A. Dmitriyevskiy, I.S. Grigor'yev, Yu.Ye. Glazkov, V.V. Kochetkov, V.I. Matveyenko, and B.G. Novoselov. Pilot-plant Reactor With Fuel and Moderator (Report No. 2502) 232

Goncharov, V.V. and et al. Some New and Rebuilt Thermal Research Reactors (Report No. 2185)

Bratchenko, B.F., P.Ye. Ovsyannikov, V.I. Chistenkov, P.V. Zinov'yev, and V.A. Tsykanov. Dismantling an Experimental Organic-uranium Isotope-producing Reactor After Four Years of Operation (Report No. 2297) 319

Dollezhal', N.A., Ye.O. Adamov, V.M. Agranov, V.A. Dukhovskiy, and V.A. Zaytsev. An Intermediate Reactor for Obtaining High Intensity Neutron Fluxes (Report No. 2142) 334

PART III. PHYSICS AND ENGINEERING OF REACTOR DESIGN

Leypunskiy, A.I., A.I. Abramov, V.M. Agranov, A.I. Baranchikov, V.I. Baranov, V.I. Gol'tsev, A.D. Gul'ko, A.A. Kaminskiy, O.D. Kazachkovskiy, M.V. Kazarnovskiy, V.S. Kirsanov, V.K. Konopov, M.M. Kovalevskiy, M.N. Nikolayev, O.N. Smirenkin, M.V. Stavisskiy, P.Y. Ufimtsev, L.N. Usachev, N.I. Petrov, Peter Chapman. Research on the Physics of Fast Neutron Reactors (Report No. 2030) 377

Fridman, V.S. and D.L. Ioffe. Homogeneous Natural Uranium Reactor (Report No. 2296) 398

Feynberg, S.M., Yu. S. Anisimov, V.P. Batkov, I.V. Kondrashov, V.K. Leshin, Yu. V. Nikol'skiy, A.N. Shmelev, V.S. Shorin, G.A. Sokolovskiy, and Ye. T. Shavolov. Fuel Burn Up in Water-water Power Reactors and Experiments With the Uranium Water Lattice (Report No. 2145) 411

Nigoreanu, V.A. Self-regulation in a Water-water Power Reactor (Report No. 2186) 534

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

KOMISSAROV, L. V.; LUNIN, G. L.; NOVIKOV, A. N.; SIDORENKO, V. A.; SIDORENKO, V. D.

"Physical Studies of Novo-Voronezh Atomic Power Station."

report submitted for 3rd Intl Conf on Peaceful Uses of Atomic Energy, Geneva, 31 Aug-9 Sep 64.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

L 29966-66 EWP(j)/EWT(m) RM

ACC NR: AR6004372 SOURCE CODE: UR/0081/65/000/015/H038/H038

AUTHOR: Novikov, A. N.; Khalimova, T. A. 36

TITLE: Synthesis of some polyphenyls and their derivatives B

SOURCE: Ref. zh. Khimiya, Abs. 15Zh155

REF SOURCE: Tr. Tomskogo un-ta, v. 170, 1964, 45-48

TOPIC TAGS: organic synthetic process, chemical reaction, hydrocarbon, sulfuric acid, nitric acid

ABSTRACT: A series of biphenyl, terphenyl, and quaterphenyl derivatives, used as scintillators for registration of elementary particles have been synthesized. Over a period of 1 hr and 10 min, 4.6 ml of HNO_3 (sp gr = 1.4) are added to a mixture of 38.5 g biphenyl, 577 ml glacial acetic acid, #31.49 g of I_2 and 33.11 ml H_2SO_4 (sp gr - 1.84) with vigorous stirring (water-bath temperature is kept at 34--36°C). After 5 min the mixture is diluted with water, and the 4-iodobiphenyl ($C_{12}H_9I$) is filtered off; the yield is 54%, m. p. 113°C (from alcohol). 13.06 g of KCN and 2.7 g Cu powder are added to 40.81 g of 4,4-diiodobiphenyl. After 3 hrs of heating at 300°C the mixture is boiled with alcohol, and then diluted with water; the 4,4-dicyanobiphenyl then precipitates. The yield is 20%, m. p. 234°C. A mixture of 440 g of 150 ml C_6H_5I, and 200 g Cu powder is placed in an autoclave, where it is kept for two hr at 280--300°C. The

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ACC NR: AP6004372

mass is then cooled, ground, and treated with boiling $CH_3COC_2H_5$. The hot solution is then filtered. From the filtrate a precipitate is separated. After distillation and purification in Al_2O_3, terphenyl is obtained; the yield is 82%, m. p. 212--213°C. A mixture of 465 g of 4-iodobiphenyl and 450 g cu powder is placed in an autoclave. The temperature is raised to 290°C over a period of one hr. After two hr at this temperature, the mixture is cooled and ground, and the quaterphenyl is obtained by distillation (from benzene). The yield is 42%, m. p. 316--317.5°C. A mixture of 1.5 ml H_2SO_4 (sp gr = 1.84) and 0.4 ml HNO_3 (sp gr = 1.4) is added during 30 min to 1 g of quaterphenyl, 1.66 g of I_2, 15 ml glacial acetic acid, 2 ml CCl_4, and 0.5 g of urea. After 2 1/2 hr of heating, the mass is cooled and 4-iodoquaterphenyl ($C_{24}H_{17}I$) is filtered off. The yield is 44%, m. p. 381°C (from cyclohexane). The 4.4'''-diiodoquaterphenyl ($C_{24}H_{16}I_2$) is similarly obtained. The yield is 72%, m. p. 403°C (from cyclohexane). [N. Nipot]

SUB CODE: 07/ SUBM DATE: none

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NOVIKOV, A.N.

Conference on the Operation of Power Reactors. Atom energ. 16 no.3:274-275 Mr '64. (MIRA 17:3)

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

NOVIKOV, A.N.

Refractories for oxygen-blown steel smelting processes.
Ogneupory 30 no.12:20-23 '65.
(MIRA 18:12)

1. Vsesoyuznyy institut ogneuporov.

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

TRONOV, B.V.; NOVIKOV, A.N.

Iodination of benzoic acid and benzaldehyde in the presence of a nitrogen-sulfur nitrating mixture. Soob.o nauch.rab.chl.VKHO no.3:9-11 '53. (MIRA 10:10)
(Iodination) (Benzoic acid) (Benzaldehyde)

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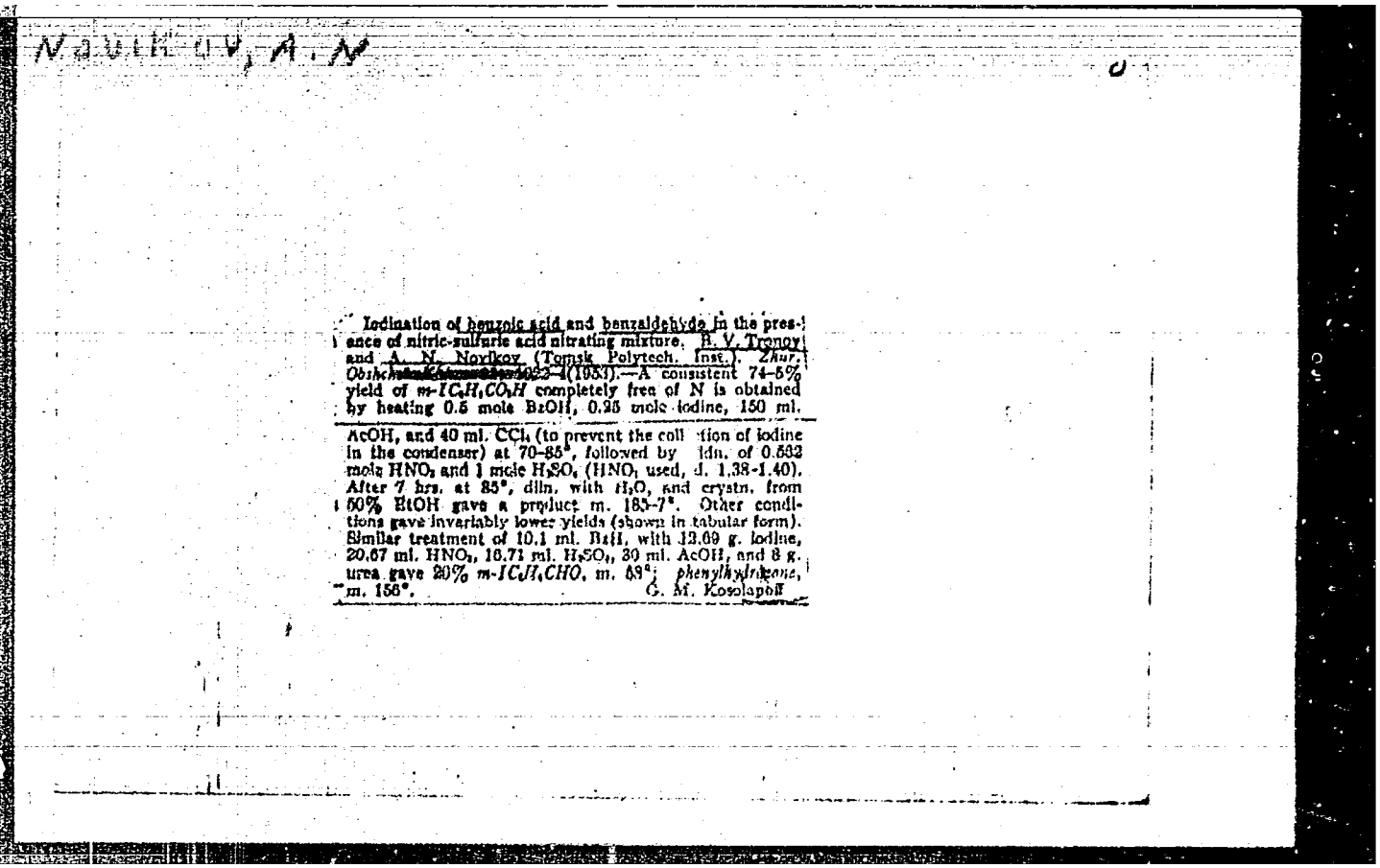

Iodination of benzoic acid and benzaldehyde in the presence of nitric-sulfuric acid nitrating mixture. R. V. Tronov and A. N. Norikov (Tomsk. Polytech. Inst.). *Zhur. Obshchei Khimii* 23, 1923–4 (1953).—A consistent 74–5% yield of *m*-$IC_6H_4CO_2H$ completely free of N is obtained by heating 0.5 mole $BzOH$, 0.25 mole iodine, 150 ml. AcOH, and 40 ml. CCl_4 (to prevent the collection of iodine in the condenser) at 70–85°, followed by addn. of 0.562 mole HNO_3 and 1 mole H_2SO_4 (HNO_3 used, d. 1.38–1.40). After 7 hrs. at 85°, dilu. with H_2O, and crystn. from 50% EtOH gave a product m. 183–7°. Other conditions gave invariably lower yields (shown in tabular form). Similar treatment of 10.1 ml. BzH, with 13.69 g. iodine, 20.67 ml. HNO_3, 16.71 ml. H_2SO_4, 30 ml. AcOH, and 8 g. urea gave 20% *m*-IC_6H_4CHO, m. 69°; *phenylhydrazone*, m. 156°. G. M. Kosolapoff

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

Novikov, A.N.

USSR.

Iodination of benzoic acid and benzaldehyde in the presence of nitric-sulfuric acid nitrating mixture. B. V. Tronov and A. N. Novikov. *J. Gen. Chem. U.S.S.R.*, 23, 1071-2 (1953) (English translation).—See *C.A.* 48, 7583i.

H. L. H.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

NOVIKOV, A. N.

USSR/Chemistry

Card 1/1

Author : Novikov, A. N.

Title : Direct iodination of benzene, toluene, chlorobenzene, iodobenzene and p-nitrotoluene.

Periodical : Zhur. Ob. Khim. 24, Ed. 4, 655 - 657, April 1954

Abstract : A nitrogen sulfate mixture can be used successfully in the reaction of iodination of many aromatic compounds. Having carried out direct iodination in strictly defined conditions and without surplus of nitric acid it becomes possible to obtain iodo-derivatives without the admixture of nitro compounds. Using the direct iodination reaction in the presence of a nitrating mixture the author derived: iodobenzene, p-diiodobenzene, mixture of o- and p-iodotoluenes, p-chloriodobenzene and 2-iodo-4-nitrotoluene. Six references; 4 USSR since 1940; 2 English since 1952.

Institution : The Tomsk Polytechnical Institute

Submitted : September 25, 1953

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

TRONOV, B.V.; NOVIKOV, A.M., red.; MORDOVINA, L.G., tekhn.red.

[Theoretical bases of organic chemistry] Teoreticheskie osnovy organicheskoi khimii. Tomsk, Izd-vo Tomskogo univ., 1958. 258 p. (MIRA 12:9)
(Chemistry, Organic)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

AUTHOR: Novikov, A. N. SOV/79-29-1-13/74

TITLE: On the Synthesis of Iodine Derivatives of Diphenyl (O sinteze yodproizvodnykh difenila)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 1, pp 58-59 (USSR)

ABSTRACT: A. N. Novikov and collaborators showed in previous investigations (Refs 1-4) that some otherwise difficultly accessible and at the same time difficultly synthesizable aromatic iodine derivatives can be easily produced and in good yield in the presence of a nitration mixture by direct iodization. The nitration mixture causes a complete reaction of iodine which in the case of substitution does not escape in form of iodine hydracid. The process of direct iodizing reaction in the presence of the nitration mixture was already discussed earlier (Refs 2, 4). The methods of synthesis of 4-iodo-and 4,4'-diiodo diphenyl over diazonium compounds, described in publications (Ref 5), are complicated and the yield is small. As demand for the mentioned compounds is high the author took up the work under review, after having investigated the methods of synthesis as described in publications, i. e. he carried out the direct iodization of diphenyl in the presence of the

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On the Synthesis of Iodine Derivatives of Diphenyl

nitration mixture in order to synthesize 4-iodo diphenyl and 4,4'-diiodo diphenyl. He was successful in his work. Details can be obtained from the experimental part. The yield in 4-iodo diphenyl and 4,4'-diiodo diphenyl amounted to 64 and 68% respectively; the melting points were 113° and 204°. There are 5 references, 4 of which are Soviet.

ASSOCIATION: Tomskiy politekhnicheskiy institut (Tomsk Polytechnical Institute)

SUBMITTED: July 1, 1957

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APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

ANDREYEV, A.S.; NOVIKOV, A.N.; CHERNY, F.

Determination of calcium and magnesium in nickel and nickel alloys. Trudy LPI no.201:46-50 '59. (MIRA 13:3)
(Calcium--Analysis) (Magnesium--Analysis)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

TROMOV, B.V.; NOVIKOV, A.N.

Halogenation of aromatic hydrocarbons and their derivatives in the presence of a nitrating mixture. Izv.vys. ucheb. zav; khim. i khim. tekh. 3 no. 5:872-875 '60. (MIRA 13:12)

1. Tomskiy politekhnicheskiy institut imeni S.M.Kirova. Kafedra organicheskoy khimii.
(Hydrocarbons) (Halogenation)

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

NOVIKOV, A.N.

Electrochemical chlorination of hydrolytic lignin. Gidroliz. i lesokhim. prom. 14 no. 1:7 '61. (MIRA 14:1)

1. Tomskiy politekhnicheskiy institut.
(Lignin) (Chlorination)

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

S/063/62/007/002/013/014
A057/A126

AUTHORS: Novikov, A.N., Khalimova, T.A.

TITLE: Synthesis of iodine derivatives of terphenyl

PERIODICAL: Zhurnal Vsesoyuznogo Khimicheskogo obshchestva imeni D.I. Mendeleyeva, v. 7, no. 2, 1962, 234

TEXT: Iodine derivatives make visible the effect of the composition and structure of organic compounds on their scintillation properties. Only one complicated method for the preparation of an iodine derivative of terphenyl is described in literature. The present authors prepared, according to a method developed earlier, by direct iodination of terphenyl in the presence of a nitrating mixture with 44.4% and 43% yield respectively, 4-iodine terphenyl and 4,4'-di-iodine terphenyl. 4-iodine terphenyl was prepared by mixing 2 g terphenyl, 15 ml glacial acetic acid, 1.12 g pulverized iodine, 1.43 ml sulfuric acid, and 2 ml carbon tetrachloride at 34-36°C and adding, vigorously stirring, dropwise 0.32 ml nitric acid, avoiding a raise in temperature, or excess of nitric acid, which would contaminate the product. Subsequently the mixture is heated to 80°C,

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cooled, filtered, washed with glacial acetic acid, and re-crystallized from toluene. In an analogous way was prepared 4,4'-di-iodine terphenyl from a mixture of 2 g terphenyl, 2.24 g pulverized iodine, 25 ml glacial acetic acid, and 3 ml carbon tetrachloride by adding dropwise a mixture of 2.9 ml sulfuric acid and 1.8 ml nitric acid at 90-95°C, with subsequent heating for 1 h and addition of 2.6 ml nitric acid. There are 5 references.

ASSOCIATION: Tomskiy politekhnicheskiy institut (Tomsk Polytechnic Institute)

SUBMITTED: September 16, 1961

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

NOVIKOV, A.N.; KHALIMOVA, T.A.

Simultaneous introduction of iodine and nitro groups into aromatic hydrocarbons of the polyphenyl series. Zhur. VKHO 7 no.6:698 '62. (MIRA 15:12)

1. Tomskiy politekhnicheskiy institut.
(Hydrocarbons) (Iodine) (Nitro compounds)

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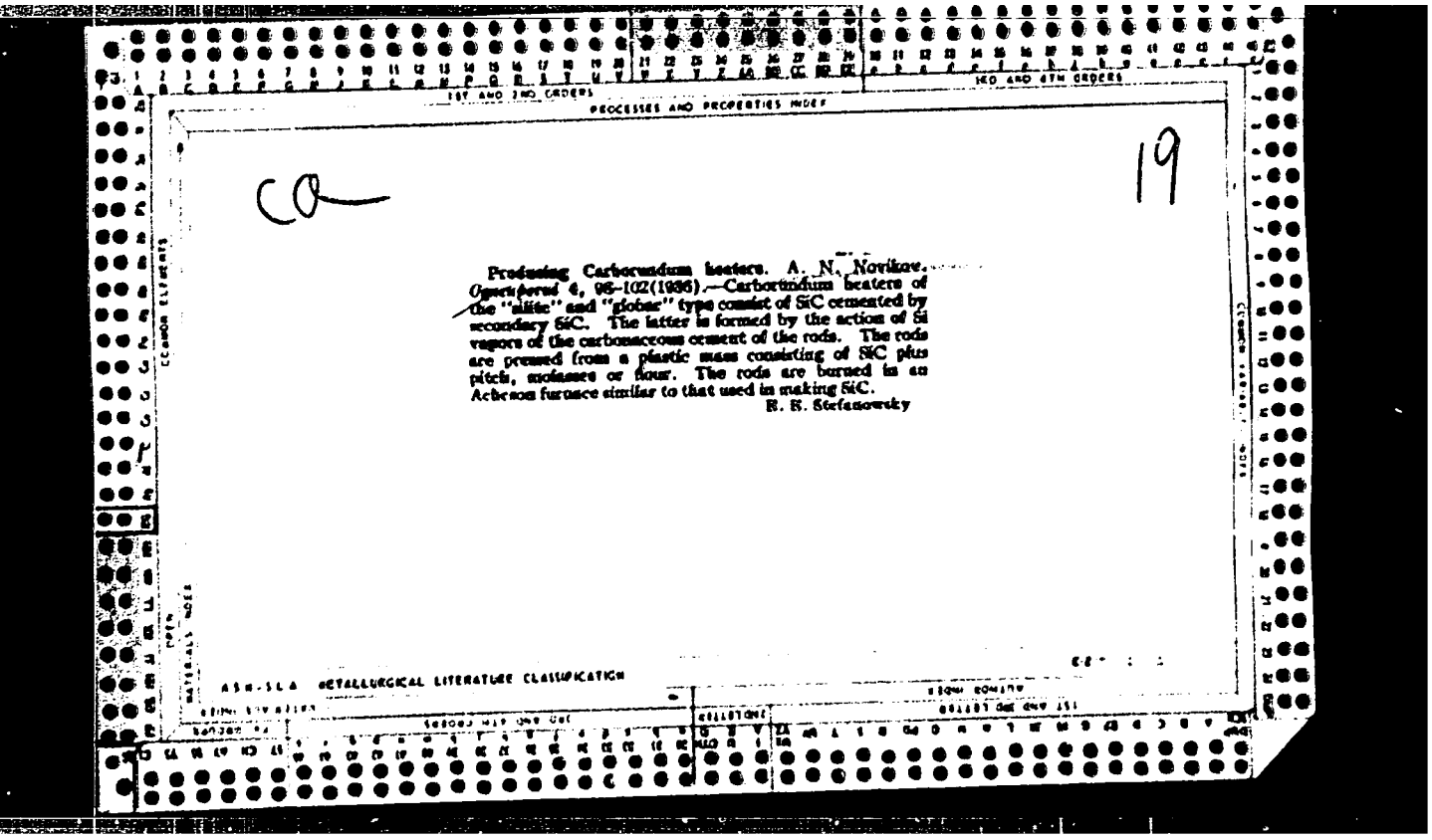

PROCESSES AND PROPERTIES INDEX

19

Producing Carborundum heaters. A. N. Novikov. *Ogneupory* 4, 98–102(1936).—Carborundum heaters of the "silite" and "globar" type consist of SiC cemented by secondary SiC. The latter is formed by the action of Si vapors of the carbonaceous cement of the rods. The rods are pressed from a plastic mass consisting of SiC plus pitch, molasses or flour. The rods are burned in an Acheson furnace similar to that used in making SiC.
R. K. Stefanowsky

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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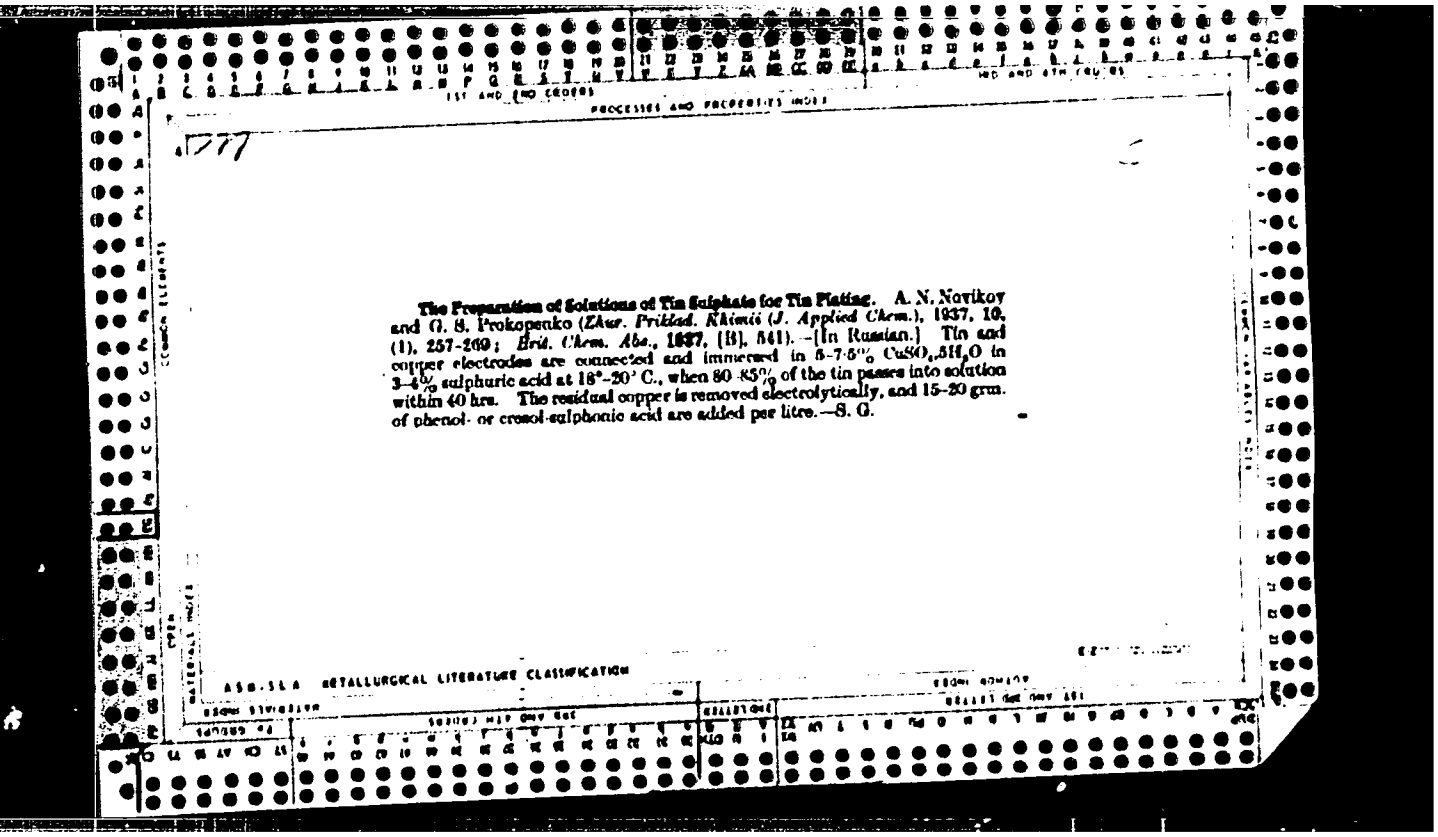

The Preparation of Solutions of Tin Sulphate for Tin Plating. A. N. Navikov and G. S. Prokopenko (*Zhur. Prikład. Khimii* (*J. Applied Chem.*), 1937, 10, (1), 257-269; *Brit. Chem. Abs.*, 1937, [B], 841).—[In Russian.] Tin and copper electrodes are connected and immersed in 5–7·5% $CuSO_4.5H_2O$ in 3–4% sulphuric acid at 18°–20° C., when 80–85% of the tin passes into solution within 40 hrs. The residual copper is removed electrolytically, and 15–20 grm. of phenol- or cresol-sulphonic acid are added per litre.—S. G.

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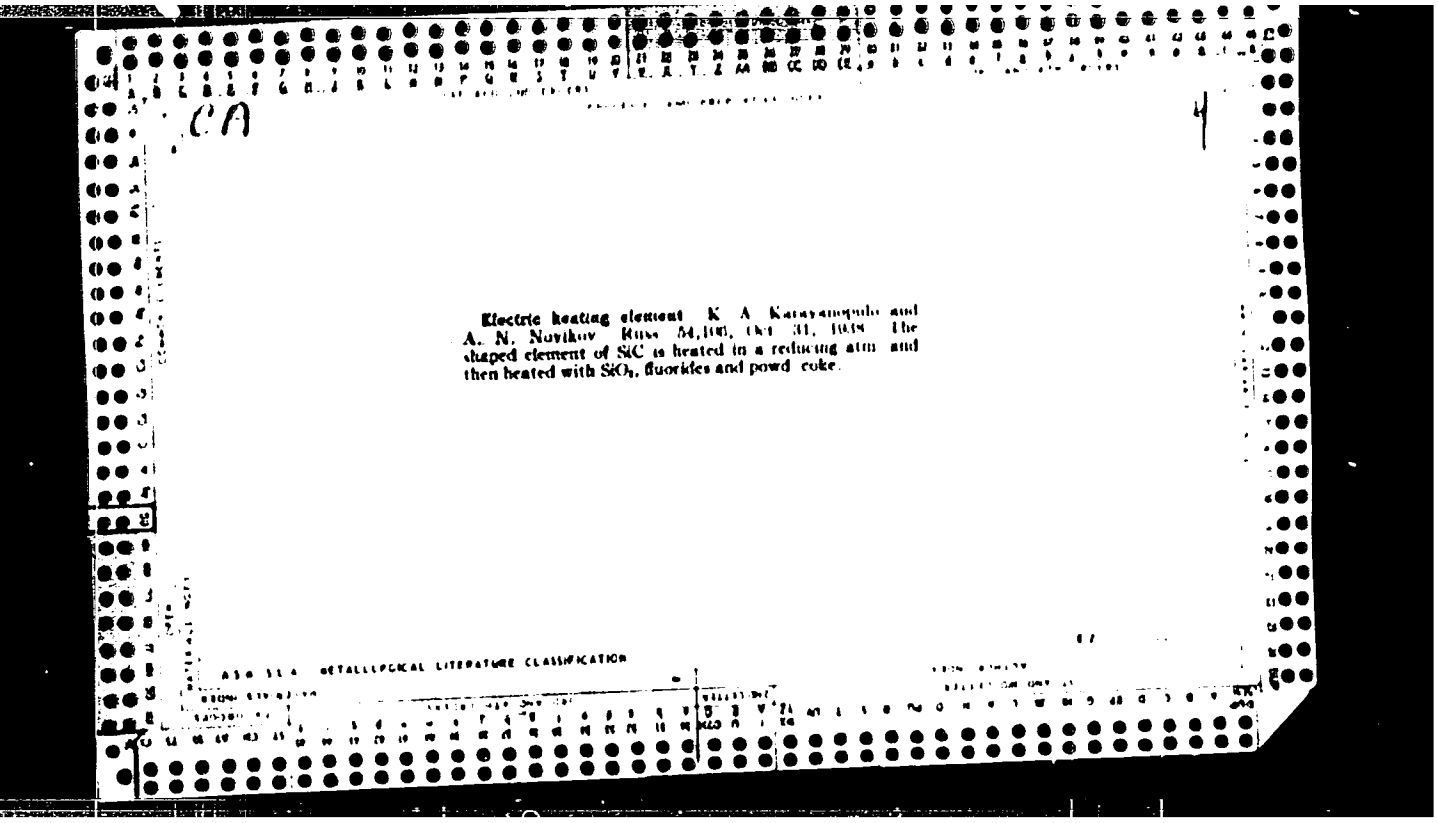

CA

4

Electric heating element. K. A. Karyamnopulo and A. N. Novikov. Russ. 54,108, Oct. 31, 1938. The shaped element of SiC is heated in a reducing atm. and then heated with SiO_2, fluorides and powd. coke.

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION

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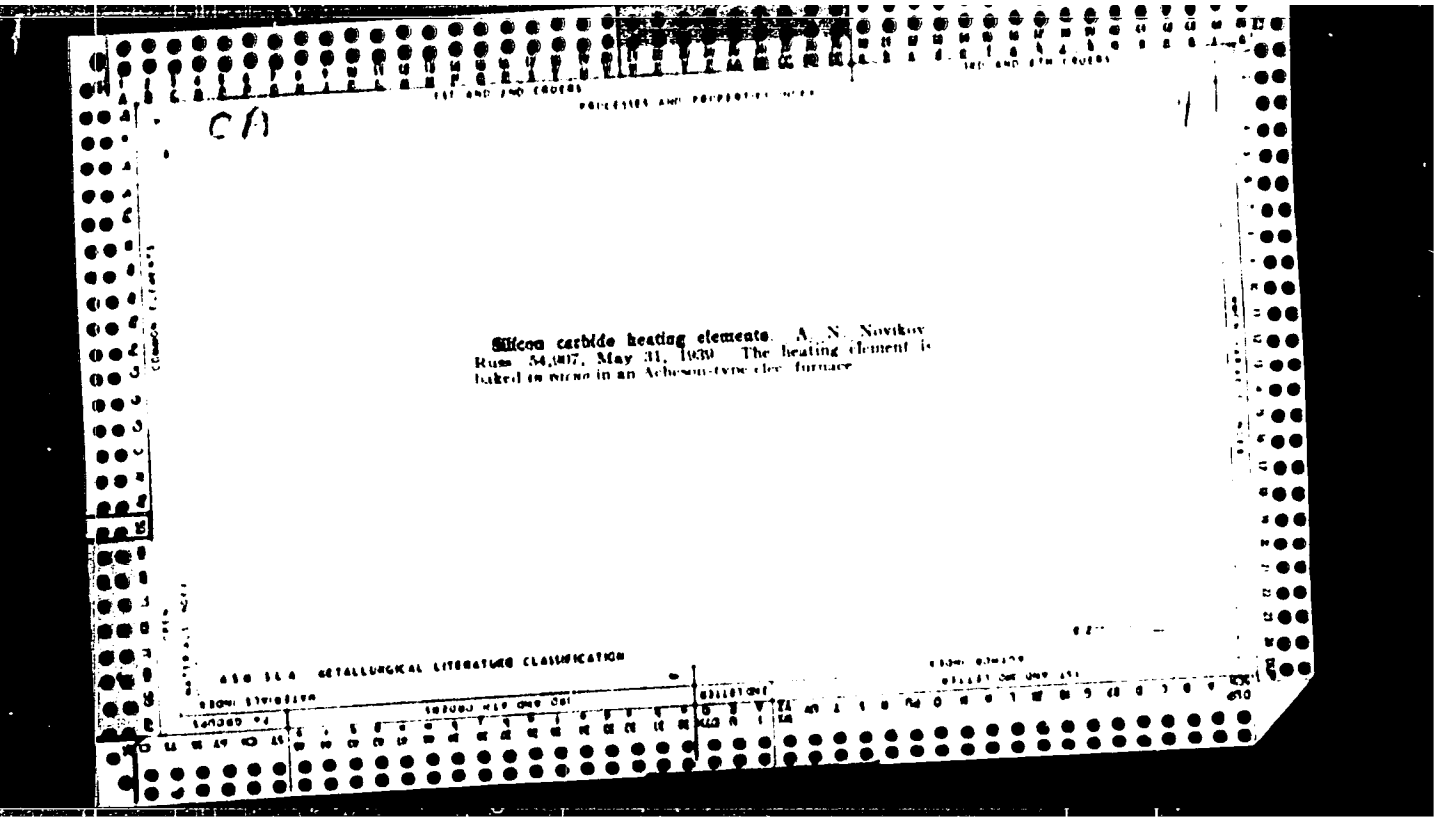

Silicon carbide heating elements. A. N. Novikov. Russ. 54,017, May 31, 1939. The heating element is baked in vacuo in an Acheson-type elec. furnace.

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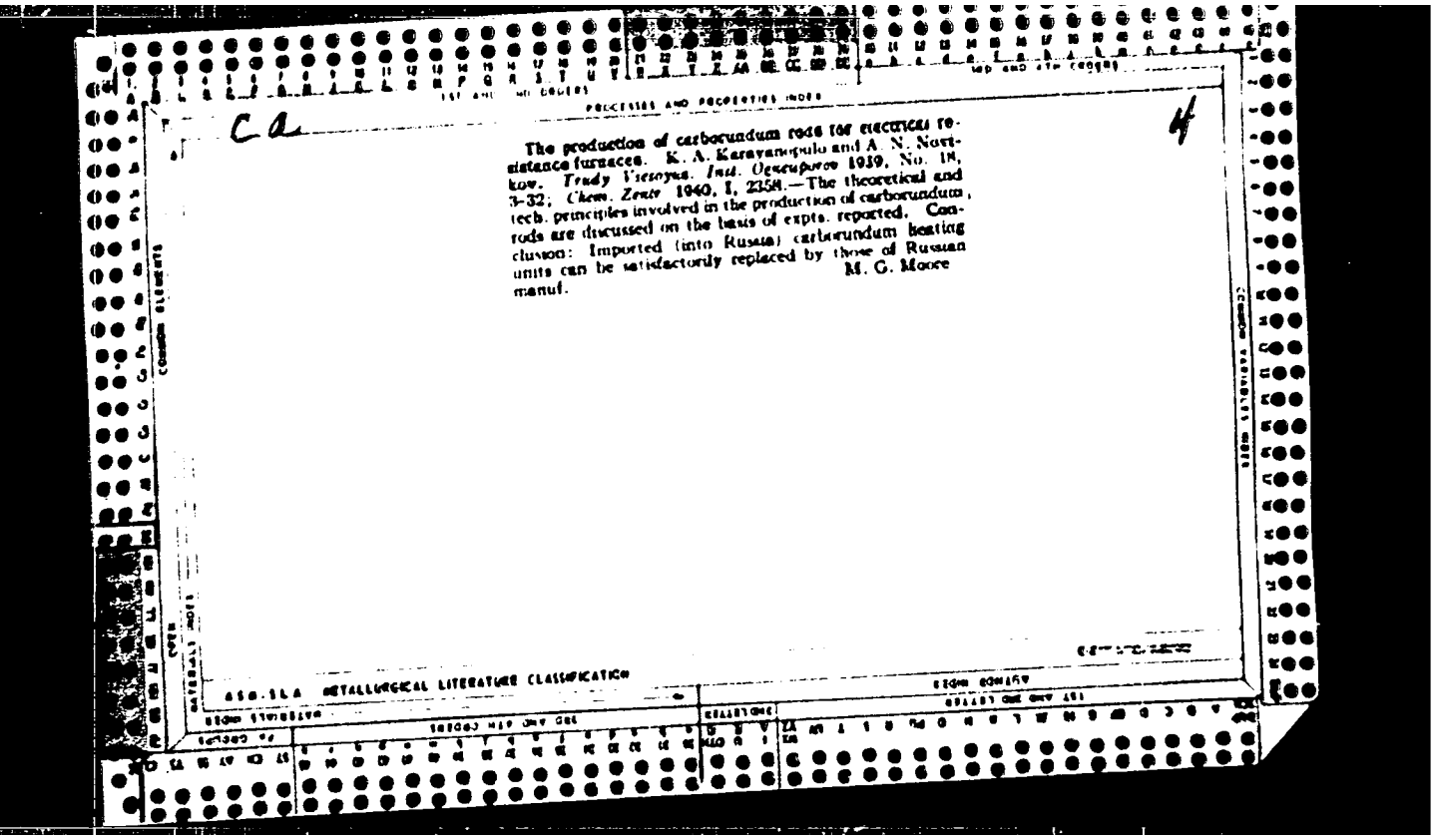

Ca

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The production of carborundum rods for electrical resistance furnaces. K. A. Karavanopulo and A. N. Nortkow. *Trudy Vsesoyus. Inst. Ogneuporov* 1939, No. 18, 3-32; *Chem. Zentr* 1940, I, 2358.—The theoretical and tech. principles involved in the production of carborundum rods are discussed on the basis of expts. reported. Conclusion: Imported (into Russia) carborundum heating units can be satisfactorily replaced by those of Russian manuf.

M. G. Moore

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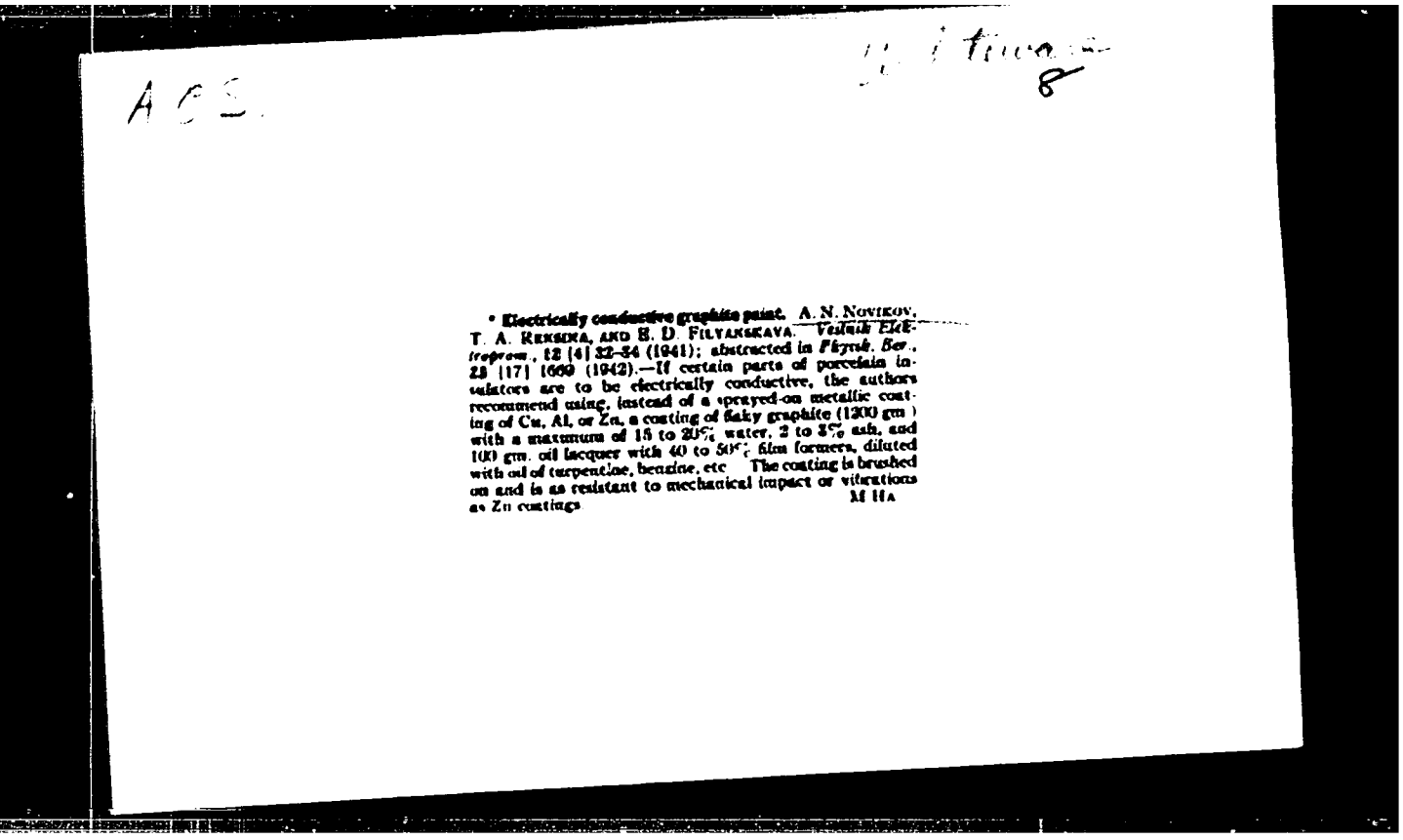

A C S.

• **Electrically conductive graphite paint.** A. N. Novikov, T. A. Reksina, and E. D. Filyanskava. *Vestnik Elektroprom.*, 12 [4] 22–24 (1941); abstracted in *Khimik. Ber.*, 23 [17] 1699 (1942).—If certain parts of porcelain insulators are to be electrically conductive, the authors recommend using, instead of a sprayed-on metallic coating of Cu, Al, or Zn, a coating of flaky graphite (1200 gm.) with a maximum of 15 to 20% water, 2 to 3% ash, and 100 gm. oil lacquer with 40 to 50% film formers, diluted with oil of turpentine, benzine, etc. The coating is brushed on and is as resistant to mechanical impact or vibrations as Zn coatings. M. Ha

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VORONIN, N.I.; NOVIKOV, A.N.

Ultrabasic rock of the Sevan coastal region as raw stock for the production of forsteritic refractory materials. Izv.AN Arm.SSR. Est.nauki no.8:91-98 '47. (MLRA 9:8)

1. Institut ogneuporov, Leningrad.
(Sevan region--Forsterite) (Refractory materials)

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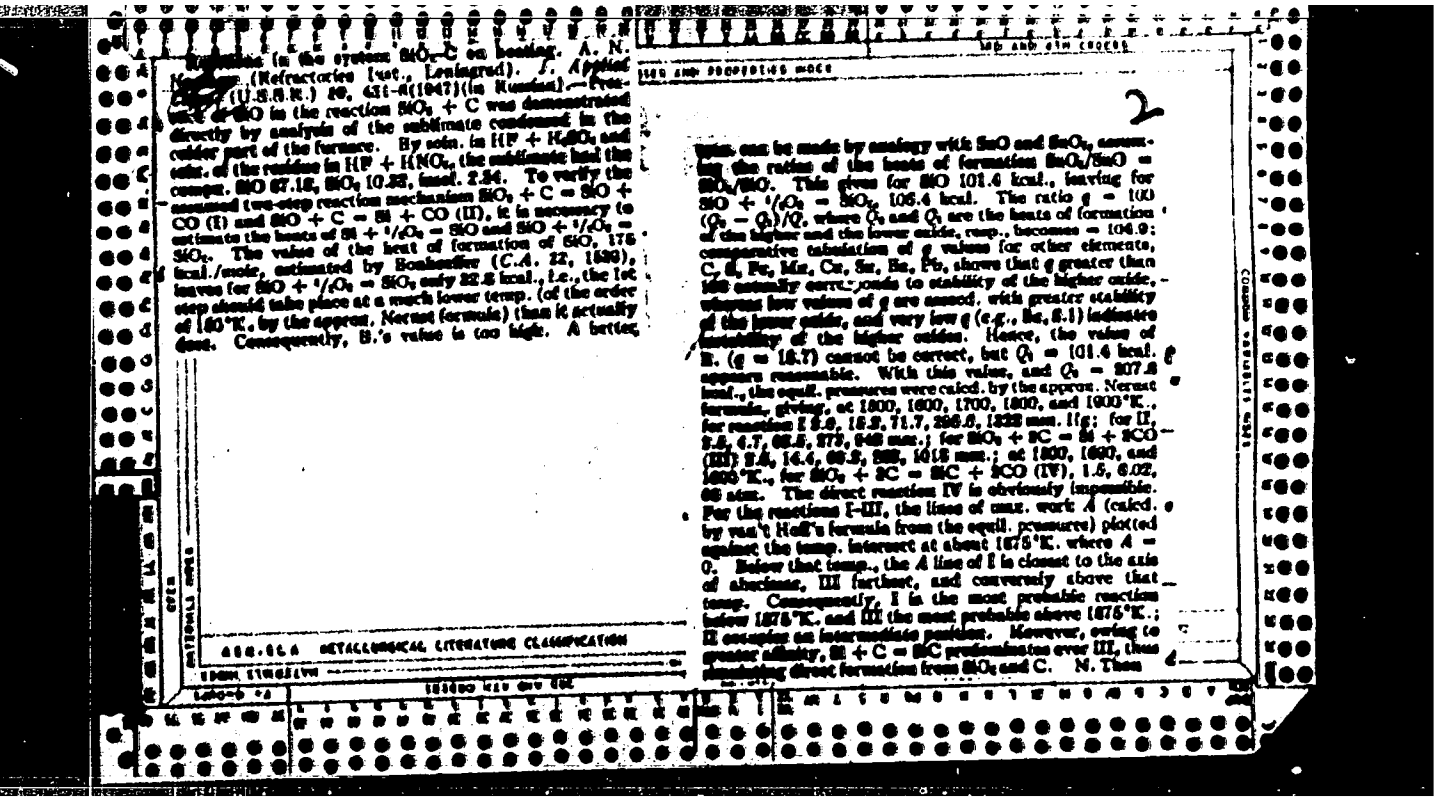

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...ppm. can be made by analogy with SnO and SnO_2, assuming the ratios of the heats of formation SnO_2/SnO = SiO_2/SiO. This gives for SiO 101.4 kcal., leaving for $2SiO + {}^1/_2O_2 = SiO_2$, 106.4 kcal. The ratio $q = 100(Q_2 - Q_1)/Q_1$, where Q_2 and Q_1 are the heats of formation of the higher and the lower oxide, resp., becomes = 104.9; comparative calculation of q values for other elements, C, S, Fe, Mn, Cu, Sr, Ba, Pb, shows that q greater than 100 usually corresponds to stability of the higher oxide, whereas low values of q are assocd. with greater stability of the lower oxide, and very low q (e.g., Ba, 8.1) indicates instability of the higher oxides. Hence, the value of B. (q = 15.7) cannot be correct, but Q_1 = 101.4 kcal. appears reasonable. With this value, and Q_2 = 207.8 kcal., the equil. pressures were calcd. by the approx. Nernst formula, giving, at 1500, 1600, 1700, 1800, and 1900°K., for reaction I 8.8, 16.2, 71.7, 266.6, 1238 mm. Hg; for II, 2.5, 6.7, 25.5, 275, 948 mm.; for $SiO_2 + 2C = Si + 2CO$ (III) 2.4, 14.4, 69.5, 388, 1615 mm.; at 1800, 1600, and 1900°K., for $SiO_2 + 2C = SiC + 2CO$ (IV), 1.5, 6.02, 60 atm. The direct reaction IV is obviously impossible. For the reactions I–III, the lines of max. work A (calcd. by van't Hoff's formula from the equil. pressure) plotted against the temp. intersect at about 1875°K. where A = 0. Below that temp., the A line of I is closest to the axis of abscissae, III farthest, and conversely above that temp. Consequently, I is the most probable reaction below 1875°K. and III the most probable above 1875°K.; II occupies an intermediate position. However, owing to greater affinity, Si + C = SiC predominates over III, thus stimulating direct formation from SiO_2 and C. N. Thon

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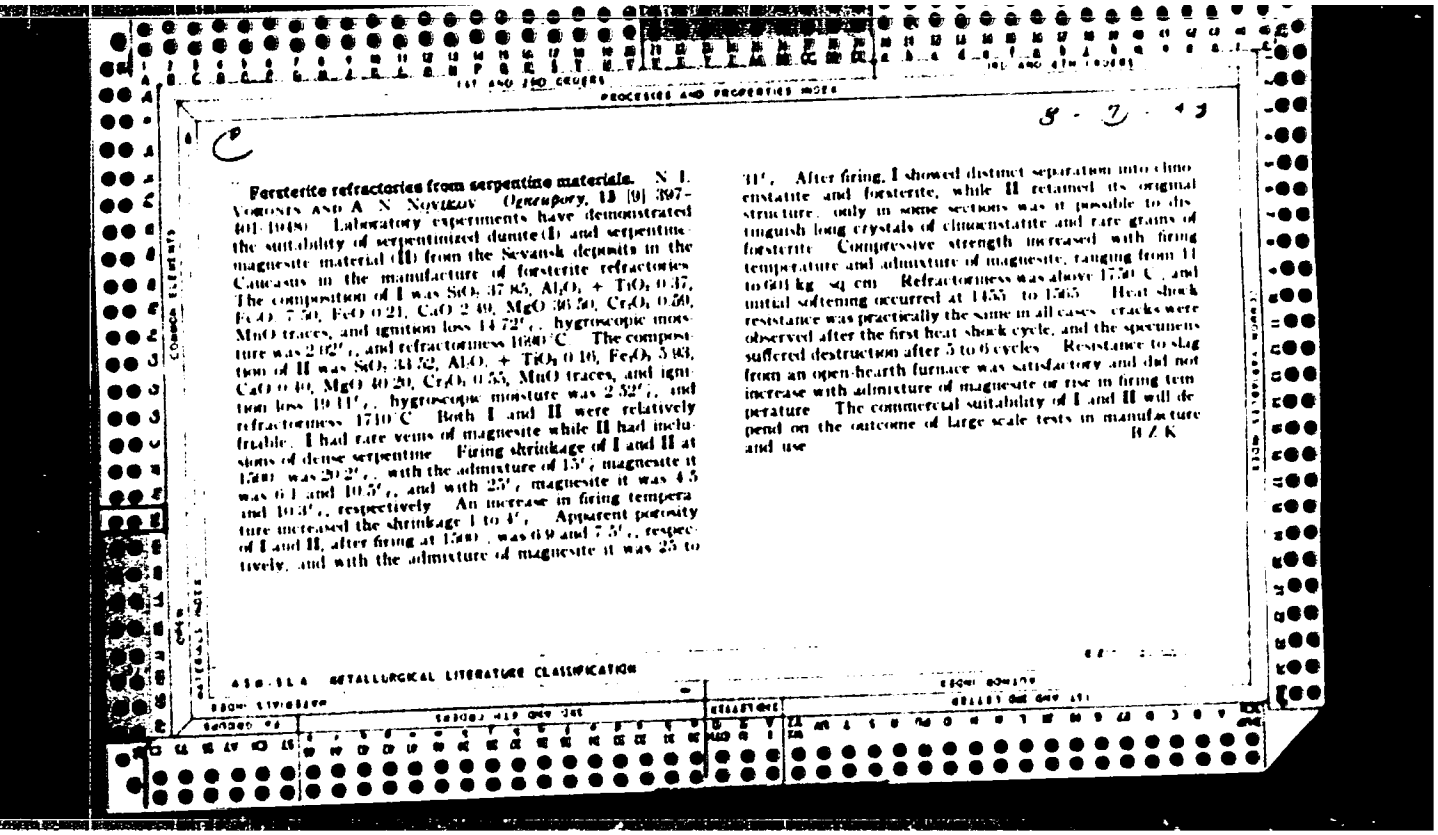

Forsterite refractories from serpentine materials. N I. Vogonts and A N Novikov *Ogneupory*, **13** [9] 397-401 (1948) Laboratory experiments have demonstrated the suitability of serpentinized dunite (I) and serpentine-magnesite material (II) from the Sevansk deposits in the Caucasus in the manufacture of forsterite refractories The composition of I was SiO_2 37.85, Al_2O_3 + TiO_2 0.37, FeO 7.50, FeO 0.21, CaO 2.40, MgO 36.20, Cr_2O_3 0.50, MnO traces, and ignition loss 14.72%, hygroscopic moisture was 2.02%, and refractoriness 1680°C The composition of II was SiO_2 31.52, Al_2O_3 + TiO_2 0.16, Fe_2O_3 5.93, CaO 0.40, MgO 40.20, Cr_2O_3 0.55, MnO traces, and ignition loss 19.11%, hygroscopic moisture was 2.52%, and refractoriness 1710°C Both I and II were relatively friable I had rare veins of magnesite while II had inclusions of dense serpentine Firing shrinkage of I and II at 1580° was 20.2%, with the admixture of 15% magnesite it was 6.1 and 10.5%, and with 25% magnesite it was 4.5 and 10.3%, respectively An increase in firing temperature increased the shrinkage 1 to 4% Apparent porosity of I and II, after firing at 1580°, was 6.9 and 7.5%, respectively, and with the admixture of magnesite it was 25 to 31% After firing, I showed distinct separation into clinoenstatite and forsterite, while II retained its original structure, only in some sections was it possible to distinguish long crystals of clinoenstatite and rare grains of forsterite Compressive strength increased with firing temperature and admixture of magnesite, ranging from 11 to 601 kg sq cm Refractoriness was above 1750°C, and initial softening occurred at 1455° to 1565° Heat shock resistance was practically the same in all cases cracks were observed after the first heat shock cycle, and the specimens suffered destruction after 5 to 6 cycles Resistance to slag from an open-hearth furnace was satisfactory and did not increase with admixture of magnesite or rise in firing temperature The commercial suitability of I and II will depend on the outcome of large scale tests in manufacture and use B Z K

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Recrystallized silicon carbide refractories. A. N. Novikov (Leningrad Inst. Refractories). *Ogneupory* 18, 542-50 (1953).—Semidry pressed shapes were made from black SiC and SiC scrap from elec. heaters, by using bonds of (1) water glass with silicate modulus of 2.8 and Latna clay and (2) dextrin, molasses, and bitumen. Pressures were 800 and 1000 kg./sq. cm. Shapes were dried at 110° for 6–7 hrs. and fired in an elec. furnace for 1.5–6 hrs. For a short firing period, a rapid temp. rise of 1000°/hr. for the 1st 30 min. and then 1600°/hr. did not cause cracks. When the temp. was below 2200°, the firing was incomplete, and at about 2400°, there were signs of decompn. of the SiC. Hence, recrysts. occurs within the narrow range of 2200–2350°. Wt. changed substantially but there was no shrinkage. During recrysts. apparent porosity increased but bulk wt. decreased, particularly for clay bond, av. drop being 0.26 for 10% and 0.73 for 20% clay. Shapes with org. binder showed smaller change in bulk wt. but still porosity was 30–40%. At 1710–1720°, and under load of 2 kg./sq. cm., there was no deformation; gas permeability was high; elec. resistance ranged from 5 to 50 ohm/cc. and showed no relationship to compn. Destruction occurred after 6–50 heat-shock cycles (850° → water), was not related to compn., and was not always preceded by the formation of cracks. Heat cond. (stationary flow method) was 24.6 kcal./m./hr./degree, with the temp. of the hot surface 335°. At 1450°, resistance against open-hearth slag of SiO_2 18.4, Al_2O_3 9.6, Fe_2O_3 29.5, CaO 25.3, MgO 4.4, and MnO 13.4% was equal to that of forsterite refractories, but slag penetration was 2.5 times as great.

B. Z. Kamich

1951

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

NOVIKOV, A. N.

USSR/Engineering - Refractories, Production, Feb 52
Methods

"Method for Manufacturing Carborundum Refractories of High Quality," A. N. Novikov, Cand Tech Sci, V. A. Smirnova, Leningrad Inst of Refactories

"Ogneupory" No 2, pp 51-62

Investigates possibility for replacing clay in carborundum refractories by other mineral binders. Best results were obtained for products with silica binder capable of withstanding furnace temp near 1,500°. Discusses influence of the binder type and quantity on thermal cond of carborundum products and effect of compacting pressure on same property.

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

USSR/Engineering - Refractory; Production Methods

Oct 52

"Improvements in Production Technology of Carborundum Refractories with Mineral Binder," A. N. Novikov, Cand Tech Sci; V. A. Smirnova, Leningrad Inst of Refractories

"Ogneupory" No 10, pp 435-445

Discusses results of laboratory investigations and industrial tests, concluding that 5-10% addition of ferrosilicon to carborundum gives products of highest quality. Clay must be completely eliminated. Increase of pressure in pressing operation from 500 to 1,000 kg/sq cm improves chiefly mechanical strength of carborundum products. Addition of concentrated sulfite liquor and water glass improves forming and bonding capacity of carborundum raw material. Article is continuation of previous work published in "Ogneupory" No 2, 1952.

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

NOVIKOV, A.N.; SMIRNOVA, V.A.

Production of high-quality silicon carbide refractories. Ogneupory 17, 51-62 '52. (MLRA 5:2)
(CA 47 no.16:8334 '53)

1. Leningrad Inst. Refractories.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

NOVIKOV, A.N.; SMIRNOVA, V.A.

Improving production of silicon carbide refractories with a mineral bond.
Ogneupory 17, 435-45 '52. (MLRA 5:10)
(CA 47 no.20:10819 '53)

1. Leningrad Inst. Refractories.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

ZAGZHDA, V.P.; TIKHONOVA, L.A.; SOKOLOV, V.I.; KARANTS, A.G.; RYBNIKOV, V.A.; KAZAKEVICH, S.S.; SARMIN, A.P.; GAVRILOV, A.I.; NOVIKOV, A.N.; NECHEPORENKO, M.A.; KAL'MOVA, Ye.A.; FEDOROV, G.A., redaktor; FEL'DGANDLER, G.G., redaktor; ROZENTSVEYG, Ya.D., redaktor izdatel'stva; MIKHAYLOVA, V.V., tekhnicheskiy redaktor

[Handbook on refractory elements and materials] Spravochnik na ogneupornye izdeliia, materialy i syr'e. Sostavlen po gosudarstvennym standartam i tekhnicheskim usloviiam. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1956. 195 p. (MLRA 10:2)

1. Russia (1923- U.S.S.R.) Ministerstvo chernoy metallurgii.
2. Leningradskiy institut ogneuporov. (for Zagzhda, Tikhonova, Sokolov, Karants, Rybnikov, Kazakevich, Sarmin, Gavrilov, Novikov, Necheporenko, Kal'mova.
(Refractory materials)

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

NOVIKOV, A N.

137-1958-1-158

Translation from: Referativnyy zhurnal Metallurgiya 1958, Nr 1, p 5 (USSR)

AUTHOR: Novikov A N

TITLE: Reactions Between Metals and Refractories at High Temperatures (Vzaimodeystviye metallov s ogneuporami pri vysokikh temperaturakh)

PERIODICAL: V sb · Fiz khim osnovy keramiki. Moscow, Promstroyizdat, 1956, pp 441-447

ABSTRACT: The possibility of reaction between metals (M) and oxides (Ox) at high temperatures is examined by means of thermodynamic analyses. Data are adduced on the heats of formation of the most important refractory oxides and their dissociation pressures at 298-2000° K. In accordance with the van t'Hoff equation: $\Delta_P = -4.57\ T \log k$, the maximum work performed in reactions between ThO_2, CaO, MgO, BeO, Al_2O_3 on the one hand and Pb, Fe, Ti, Zr and C on the other have been calculated. A simplified method of evaluating the stability of M - Ox systems by the differences in the heats of formation of the corresponding oxides is advanced. If the ratio of the difference between the

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137-1958-1-158

Reactions Between Metals and Refractories at High Temperatures

heats of formation of refractory Ox's and M Ox's (per gram-atom O_2) is more than 50 percent of the heat of formation of refractory Ox's, there is little possibility of M reaction between the M and the Ox's, but if it is less than 50 percent, reaction is possible. Data on this simplified method is assembled in tabular form.

S. G.

1. Metal oxides--Heat of formation 2. Refractory materials--Heat of formation 3. Metals--Chemical reactions 4. Refractory materials--Chemical reactions

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137420011-1

NOVIKOV, A. N

131-12-6/9

AUTHOR: Novikov, A.N.

TITLE: Research Work (Issledovatel'skiye raboty). Metal Impregnation of Products Made From Silicon Carbide (Propitka metallami izdeliy iz karbida kremniya)

PERIODICAL: Ogneupory, 1957, Nr 12, pp. 557-562 (USSR)

ABSTRACT: The impregnation of silicon carbide by metals in the gaseous state makes it possible to obtain a complete working operation, and for this purpose the oxides of the corresponding metals can be used. Table 1 shows the compositions of the test masses in form of prisms, cylinders, etc. As metal-producing materials silicon, aluminum, and several other metals and/or their oxides were used (table 2). The scheme of a tube-shaped resistance furnace, which was used for this purpose, is shown in figures 1 and 2. Table 3 describes certain properties of the metals and the impregnation of silicon carbide, and the whole problem is described in detail. Table 4 shows the properties of test samples of silicon carbide after impregnation by metallic silicon in the gaseous state. Table 5 compares the physical properties and the chemical compositions of various heaters. In conclusion it is stated, among other things, that the impregnation

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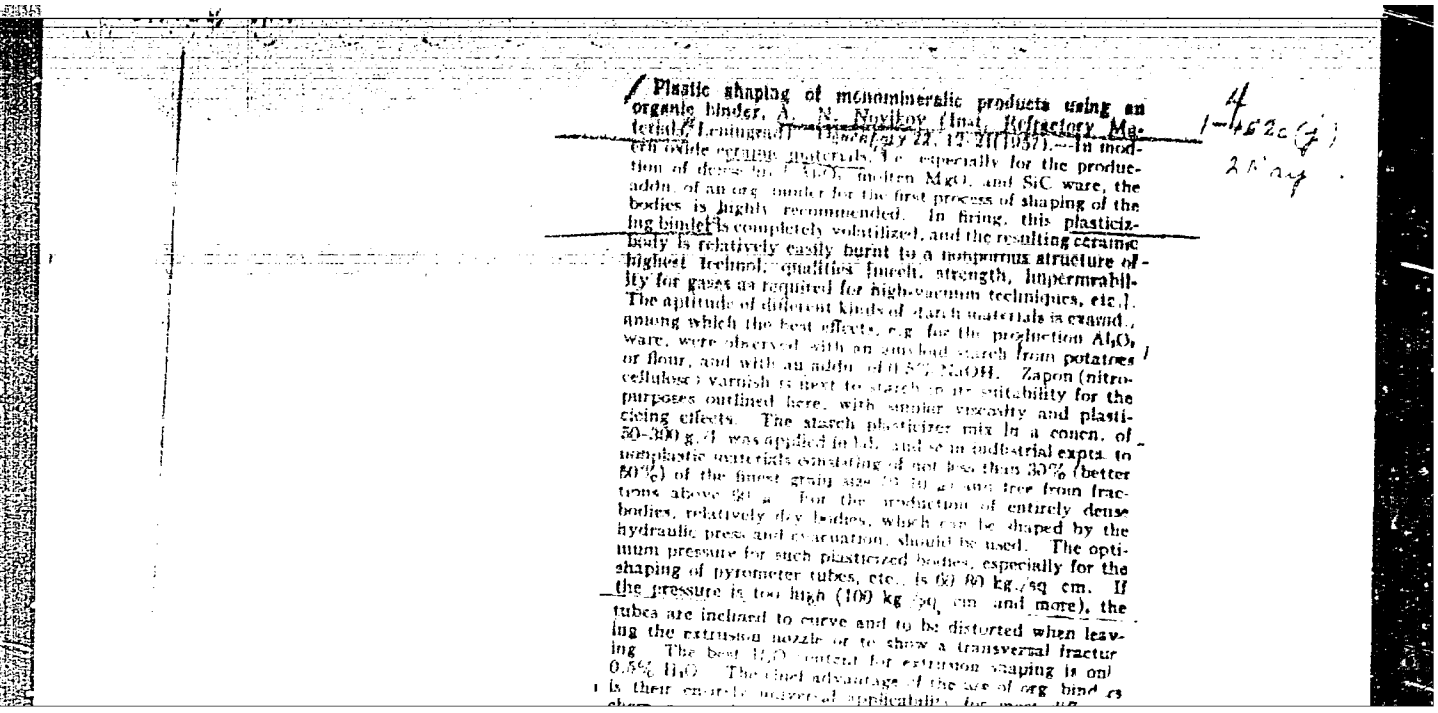

Plastic shaping of monomineralic products using an organic binder. A. N. Novikov (Inst. Refractory Materials, Leningrad). Keramika 22, 17-21(1957).—In modern wide ceramic materials, i.e. especially for the production of dense (to 100% theor.) fused MgO, and SiC ware, the addn. of an org. binder for the first process of shaping of the bodies is highly recommended. In firing, this plasticizing binder is completely volatilized, and the resulting ceramic body is relatively easily burnt to a homogeneous structure of highest technol. qualities (mech. strength, impermeability for gases as required for high-vacuum techniques, etc.). The aptitude of different kinds of starch materials is examd., among which the best effects, e.g. for the production Al_2O_3 ware, were observed with an unsalted starch from potatoes or flour, and with an addn. of 0.5% NaOH. Zapon (nitrocellulose) varnish is next to starch as to suitability for the purposes outlined here, with smaller viscosity and plasticizing effects. The starch plasticizer mix in a concn. of 50-300 g./l. was applied in lab. and so in industrial expts. to nonplastic materials consisting of not less than 30% (better 80%) of the finest grain size (0-10 μ) and free from fractions above 60 μ. For the production of entirely dense bodies, relatively dry bodies, which can be shaped by the hydraulic press and evacuation, should be used. The optimum pressure for such plasticized bodies, especially for the shaping of pyrometer tubes, etc., is 60-80 kg./sq. cm. If the pressure is too high (100 kg./sq. cm. and more), the tubes are inclined to curve and to be distorted when leaving the extrusion nozzle or to show a transversal fractur ing. The best H_2O content for extrusion shaping is onl 0.5% H_2O. The chief advantage of the use of org. bind is their enormous universal applicability for most

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ACCESSION NR: AP4021665 S/0131/64/000/003/0137/0141

AUTHORS: Prokhorova, I. Ya.; Novikov, A. N.

TITLE: Improving the quality of the carborundum refractory materials

SOURCE: Ogneupory*, no. 3, 1964, 137-141

TOPIC TAGS: refractory material, carborundum, suspension binder, dry binder, powdered silicon binder, Chl clay, gas permeability

ABSTRACT: The technique of baking carborundum materials, used at Semilukskiy ogneuporny*y zavod (Semiluksk Refractory Plant) was unsatisfactory because items thicker than 20 mm had friable, black, undesirable cores. This defect was caused by the incomplete burning of the coke residue formed in the process. Experiments were conducted with different mineral binders to improve the quality of the products. One series of these experiments involved the introduction of a binder in suspension so as to secure a more even distribution of the binding element in the mixture and a better burning of the organic binder. In other experiments finely powdered silicon was introduced into the mixture. No black cores were formed in the items made of carborundum (usual grain size) with the suspension-

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ACCESSION NR: AP4021665

binders made of sulfite-alcohol malt grains and clay Chl. The addition of metallic silicon to the mixture improved the quality of the product. The mass with 10% powdered silicon had the best properties. The use of the suspension-binders in the mixtures with 10% powdered Si requires further extensive industrial testing. Orig. art. has: 6 tables.

ASSOCIATION: Vsesoyuznyy institut ogneuporov (All-Union Institute of Refractory Materials)

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